

THE

Soybean Digest



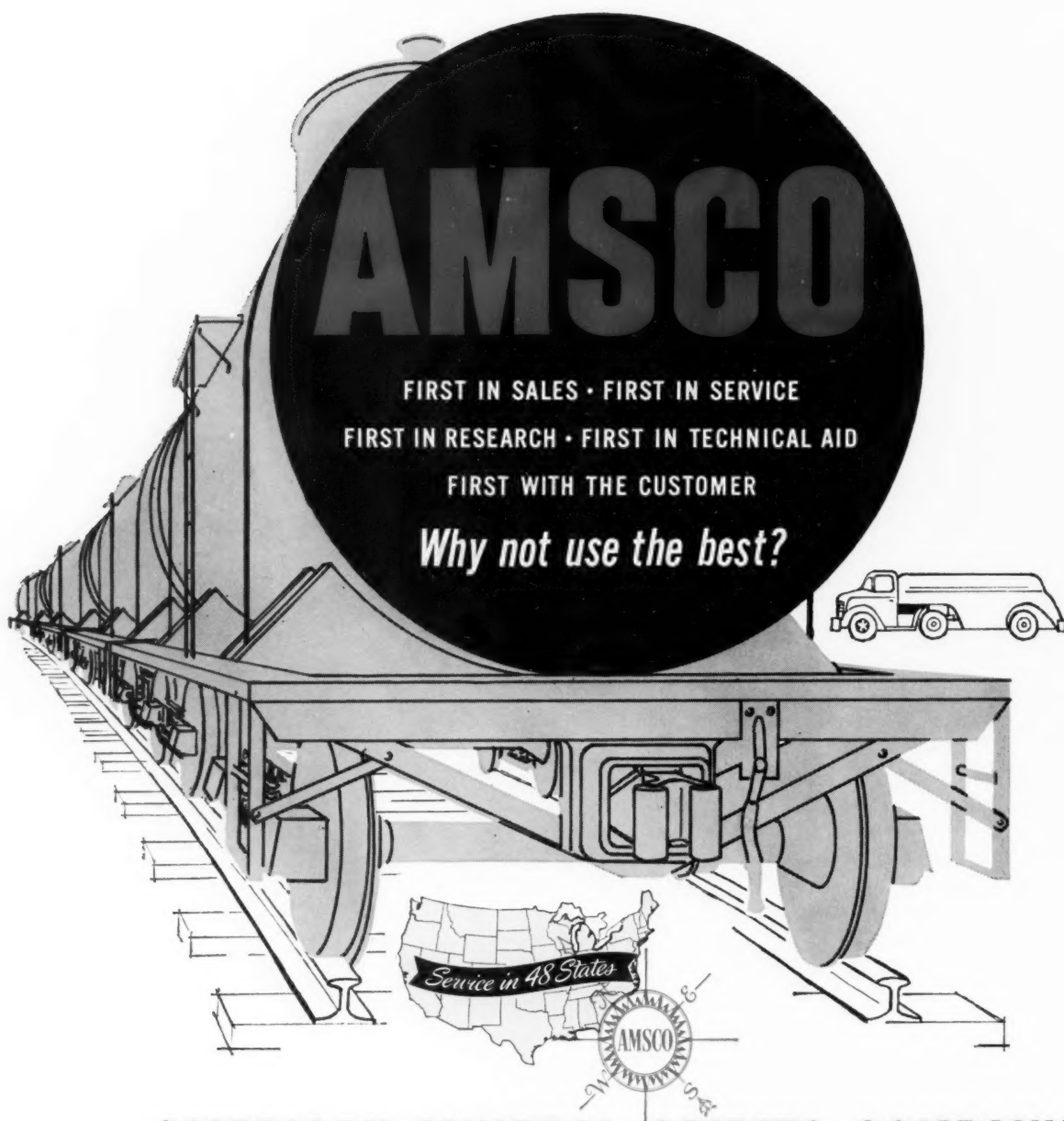
Photos by Eugene Taylor

Scenes From Annual Convention Banquet

Report On ASA'S 39th Convention

SEPTEMBER 1959 • VOLUME 19 • NUMBER 11

FIRST in solvents



AMERICAN MINERAL SPIRITS COMPANY

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THE Soybean Digest

REG. U. S. PAT. OFF.

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Soybean Council of America, Inc.
HUDSON, IOWA

Vol. 19 September, 1959 No. 11

IN THIS ISSUE

Index of Advertisers	4
The News in Brief	7
Honorary Life Members 1959	10
Report of 39th Annual Convention	12
National Soybean Processors Association Meeting	13
Resolutions	14
Report of the President	16
JOHN SAWYER	
Report of the Executive Vice President and Secretary-Treasurer ..	18
GEO. M. STRAYER	
What the Soybean Council Is Doing in Italy	22
DOMINIC J. MARCELLO	
The Oil Market in Spain	24
JUAN S. DE MADARIAGA	
The Scope of Soybeans in India	26
ARUN K. CHHABRA	
Foreign Market Development and U. S. Oilseeds	28
RUSSELL J. HUDSON	
How Much Protein Can We Use in America?	34
ELMER R. KIEHL	
The World Needs More Soybeans!	38
ERSEL WALLEY	
Another Look at Selling	42
LUTHER J. PICKREL	
The Foreign Agricultural Research Program Under P. L. 480	46
G. E. HILBERT	
Soybean Breeding Research—Progress and Problems	54
HERBERT W. JOHNSON	
Beginning with Soybeans	56
R. E. HODGSON	
Current Status of the Soybean Cyst Nematode	58
JOSEPH F. SPEARS	
Research on the Increasing Use of U. S. Soybeans in Japan	62
ALLAN K. SMITH	
Japanese Scientists Look at U. S. Soybeans	66
TOKUJI WATANABE AND KAZUO SHIBASAKI	
Soybean Growing in Australia	68
JOHN E. BLIGH	
What Price for 1959-Crop Soybeans?	70
T. A. HIERONYMUS	
Father of U. S. Soy Crop Passes	75
Plan Solvent Plant at Stuttgart	76
Grits and Flakes	77
Japanese American Soybean Institute	80
Time to Revise Japanese Import Formula	80
SHIZUKA HAYASHI	
Crop Report	82
New Products and Services	85
Washington Digest	86
PORTER M. HEDGE	
Market Street	87
Midsouth Soybean and Grain Shippers Meet	88
August Markets	90
In the Markets	92

THE SOYBEAN DIGEST

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THE AMERICAN SOYBEAN ASSOCIATION

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tario, Canada.

Objectives of the American Soybean As-
sociation include the bringing together of
all persons interested in the production,
distribution and utilization of soybeans; the
collection and dissemination of the best
available information relating to both the
practical and scientific phases of the prob-
lems of increased yields coupled with
lessened costs; the safeguarding of produc-
tion against diseases and insect pests; the
promotion of the development of new
varieties; the encouragement of the inter-
est of federal and state governments and
experiment stations; and the rendering
of all possible services to the members of
the Association.

INDEX OF ADVERTISERS

Academic Press	79	Albert Dickinson Co.	21	Nellis Feed Co.	86
Acme Traffic Service.....	58	Drake Petroleum Co.....	60	Nickel Plate Road	63
Aeroglide Corp.	45	Louis Dreyfus Corp.	79	North Iowa Cooperative	
Allied Mills, Inc.	96	Dunbar Kapple, Inc.	29	Processing Assn.....	76
American Mineral Spirits Co.	2	Eastern States Petroleum and		Penola Oil Co.	5
V. D. Anderson Co.	6	Chemical Corp.	9	Phillips Petroleum Co.	95
O. B. Armstrong & Son.....	57	A. T. Ferrell & Co.....	71	Port of New Orleans	52
Bache & Co.	94	French Oil Mill Machinery Co.	91	Prater Pulverizer Co.	61
Barrow-Agee Laboratories, Inc.	83	Jacob Hartz Seed Co., Inc.	51	PTC Cable Co.	41
Berkley Associates	24	Hess Terminal Corp.	31	Quincy Soybean Products Co.	74
Black, Sivalls & Bryson, Inc.	53	Honeymead Products Co.	25	Rice Grain Corp.	36
Blaw-Knox Co.	69	Hot Spot Detector, Inc.	84, 85	Ross Machine &	
R. W. Booker & Associates.....	73	Huntley Mfg. Co.	11	Mill Supply, Inc.	30
Buhler Mill Engineering Co.	65	Illinois Soy Products Co.....	32	Seedburo Equipment Co.	57
Butler Mfg. Co.	48, 49	Inland Forwarding, Inc.	78	Shanzer Mfg. Co.	33
Cargill, Inc.	89	Iowa Milling Co.	59	Simon-Carter Co.	37
J. I. Case Co.....	15	Kansas Soya Products Co., Inc.....	74	Southern Soya Corp.	66
Commodity Trend Service	56	Lauhoff Soya Co.	39	Standard Commission Co.	88
Crippen Mfg. Co., Inc.	75	Law & Co.	79	Stillpass Transit Co.	66
Dannen Mills, Inc.	67	George Lloyd Levin	86	Twin City Machine Co.	62
Davenport Machine &		O. E. Linsin, Inc.	43	Urbana Laboratories	82
Foundry Co.	47	Metropolitan Fats & Oils, Inc.....	27	B. I. Weller Co.	64
Davidson-Kennedy Co.	92, 93	Midwest Burlap & Bag Co.	70	K. I. Willis Corp.	94
Delphos Grain &		Monon Railroad	50	Winslow Government Standard	
Soya Products Co.	79	Myers-Sherman Co.	17	Scale Works, Inc.	83
				Woodson-Tenent Laboratories.....	4

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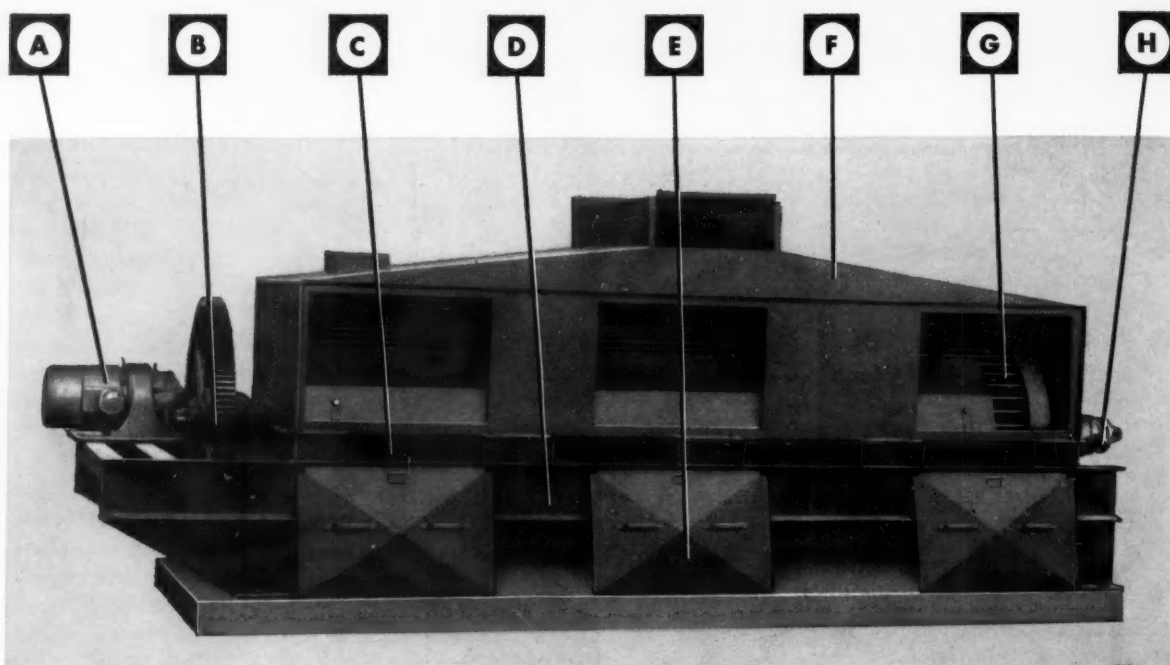
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THE NEWS IN BRIEF

THE CROP, MARKETS AND OTHER ITEMS OF NOTE

No Over-Supply In 1960

"The total supply of beans available for the 1959-60 marketing year will be less than the 595 million bushels available this year," notes L. H. Simerl, department of agricultural economics, University of Illinois. "Farmers are producing large numbers of hogs and poultry, and production will continue large in 1960. This will require large amounts of soybean meal, which is our chief source of protein supplements. **If exports hold up, most of the prospective supply of soybeans will be used up before combines roll in 1960.**"

Latest Report on Exports

Edible oil exports for the marketing year that closes Sept. 30 are now figured at around 1.2 billion pounds, according to the Department of Agriculture's latest report. **This will equal the 1956-57 record season.** Exports will include close to 900 million pounds of soybean oil and about 400 million pounds of cottonseed oil.

Soybean meal output is setting new records this year. Production of 9.6 million tons is forecast for the season closing Oct. 1. Of this, about 9.1 million tons will be fed to livestock. Exports could exceed the record of 443,000 tons in 1956-57, USDA officials think. **Still lower meal prices are expected this fall with the new crush,** and lower prices for hogs, poultry and eggs.

Japanese Soybean Imports

The Japanese government's estimate of soybean import requirements during the April 1959-March 1960 fiscal year is 36.7 million bushels, according to the Foreign Agricultural Service, USDA. Of the 18.3 million bushels of soybeans Japan intends to import during the first half year, 15.8 million are to be from the United States. During all of 1958 Japan imported 33.2 million bushels, 28.6 million of which came from the United States.

A trading company of Tokyo, Japan, has announced it has come to provisional terms with the Soviet Grain Corp. **for purchase of about 30,000 metric tons of Russian soybean meal.** The price reportedly has been fixed at \$69 per ton c.i.f. Japan, said to be the lowest bid quoted in recent years. However, the contract is subject to approval by the food agency of the Japanese Ministry of Agriculture and Forestry. Shipment is expected to be made between October and February, provided the letter of credit is opened by the end of September.

The contemplated importation is expected to encounter opposition by the local oil industry because the Japanese meal market has been suffering from an unusually bearish trend. But there is increasing belief that the proposed import plans will be carried out.

Communist China has announced that its northern and central areas are suffering from a drought described as the worst in many years, Foreign Agricultural Service reports. Thirty-two million acres of crops are threatened, including much of China's best agricultural land. Among crops in the drought area are soybeans.

Shipments of soybeans through the Suez Canal October-April were over 17.4 million bushels compared with 7.6 million bushels for the same period a year ago, according to Foreign Agricultural Service. But a greatly reduced volume of copra practically offsets the larger movement of beans, and total oilseed shipments were up only 5%, according to FAS. The soybean shipments came from Red China.

The Cuban government has reduced by 33% the quantity of soybean oil meal to be allowed duty-free importation during 1959, reports USDA. Also, beginning Jan. 1, 1960, the annual quantity of soybean meal that can be

imported duty-free will be reduced by 66%. Cuba imported 38,400 tons of soybean cake and meal in 1958, all from the United States.

The U. S. Department of Agriculture has announced that official inspection services for grain and soybeans from the United States will be provided at Canadian points along the St. Lawrence waterway. Inspection and certification will be on the basis of U. S. official grade standards. The action, which was advocated by the American Soybean Association, was taken to facilitate the marketing of U. S. grain in export channels.

First Harvest Reports

By late August there were a few scattered reports of soybeans being harvested in Minnesota, Illinois and Missouri, and of a car of beans being received from southeast Missouri. Henry Leitschuh, Sleepy Eye, Minn., said combining had started on Acme soybeans in his area.

But no really substantial crop movement was expected until Sept. 10-15.

Many areas in the soybean belt continued to receive beneficial rainfall in late August. The Weather Bureau noted that soybeans were generally in good condition in most portions of the commercial belt, although the moisture deficit had reduced prospects in some of the dry areas. Drought was reported as especially severe in South Dakota.

"Due to the excellent conditions which have existed during the month of August, we believe an additional 20 to 25 million bushels have been added to whatever prospects actually existed on Aug. 1," notes Dallas E. Western of Quaker Oats Co. But Western estimated a total crop of 500 million bushels Aug. 1, rather than the 531 million estimated by USDA.

A few late reports on the crop as the Digest went to press:

Arkansas Weekly Weather and Crop Bulletin: Recent rains were beneficial to the crop in some counties but it is too dry for beans to develop properly in others. Irrigated beans are setting a heavy crop of pods.

Georgia Weekly Weather and Crop Bulletin: Statewide the crop is reported to be in "fair" to "good" condition.

Iowa Weekly Weather and Crop Bulletin: Soybean prospects continue good in most areas although additional moisture would be beneficial, especially in west central Iowa.

Kansas Weekly Weather and Crop Report: Podding ahead of a year ago.

Carver Brown, Laddonia, Mo., calls August rainfall in Audrain County below normal but the crop was carried along by July rains and condition was good to excellent. He looks for a yield equal to or slightly below 1958. He says the load of beans received by the MFA mill at Mexico, Mo., Aug. 17 was the earliest on record. General movement in the area is expected to start Sept. 10 to 15.

Geo. C. Adams & Co., Kansas City, Mo., reports soybeans doing well in the vicinity. "Plenty storage available and farmers in a holding mood."

Quarantine New Areas for Nematode

Some areas in Nansemond County, Va., found infested with the soybean cyst nematode, have been added to the area regulated because of the pest, the U. S. Department of Agriculture reports. The pest was discovered in Virginia in the fall of 1958 and the infested localities immediately placed under state regulation.

Symptoms that caused a nematode scare in Christian County, Ill., in August have been diagnosed as caused by red spider mites.

J. E. Johnson, Champaign, Ill., says local elevators report the smallest advance selling in years. "Continue to suggest sales at or near \$2 rather than go into storage. Respectfully suggest producers assume more responsibility in attempting to keep soybeans out of the surplus dilemma we have with corn and wheat."

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		50%	154
		90%	155
		Dry Point	156
	% Aromatics		less than 0.3
Solvency Power	Aniline Point °F		143
Color	Crystal Clear		

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		50%	203
		90%	205
		Dry Point	207
	% Aromatics		less than 0.3
Solvency Power	Aniline Point °F		144
Color	Crystal Clear		



John W. Evans



R. E. Hodgson

Honorary Life Members 1959

John W. Evans

JOHN W. EVANS of Montevideo, Minn., has been a leading Minnesota seed producer for almost 40 years.

Mr. Evans operates 500 acres of good Minnesota farm land near Montevideo, where he specializes in hybrid corn and soybeans.

Mr. Evans was born near Montevideo in 1890. After graduating from Montevideo High School and Hamline University at St. Paul, and teaching high school science and athletics for a year, he spent 3 years in California developing a citrus orchard for his father.

He returned in 1915 to Montevideo to take over the Evans farm and has been there ever since. He began specializing in pure seed production in 1920. He became a director of the Minnesota Crop Improvement Association in 1924 and served as its president from 1926 until 1934. He continued as a director until 1950.

Mr. Evans helped organize the Minnesota Hybrid Seed Corn Growers in 1939 and served as the executive secretary in 1948. He was elected a Premier Seed Grower in the first class of honored seed growers in 1928.

He was elected a director of the American Soybean Association in 1946 and served as president 2 years. He has been very active in the affairs of the Association for years. He was with a trade mission that went to Japan for the Association in the fall of 1957.

He was president of Farmers Equity Elevator Co. at Montevideo for 34 years.

Mr. Evans is a republican and Methodist—and active as both.

Robert E. Hodgson

TO R. E. HODGSON of Waseca, Minn., must go great credit for stimulating the expansion of soybeans as a crop in that state. Until World War II soybeans were almost exclusively a forage crop in Minnesota. But during the 1950's soybeans have become an important cash crop in that state, which now ranks near the top in the nation in soybean production, at least partly due to "Bob" Hodgson's efforts.

Mr. Hodgson was born in Luverne, Minn., in 1893. He grew up on Fairview Stock Farm there and graduated from Luverne High School. He received his B. S. degree at the University of Minnesota in 1916 and his M. S. degree there in 1930.

He was teacher in the School of Agriculture at the University of Minnesota from 1915 to 1918, and county agent for Lyon County, Minn., in 1918. He became superintendent of the Southern Experiment Station, University of Minnesota, Institute of Agriculture at Waseca, in 1919, the post which he still holds.

During his long tenure he has been a vigorous promoter of soybeans. The importance of the soybean crop was called to the attention of the public through "Bob's" many



David G. Wing (right) presents Robert Hodgson with award.



Evans (right) receives medallion from C. G. Simcox.

**ASA's 39th
at St. Louis**

personal contacts, farm meetings, news stories in local papers and practical feeding trials with livestock at the Experiment Station. Mr. Hodgson is widely known for his timely and very interesting column published in the local newspapers and farm press.

He is widely known for his work with boy scouts and many young men have profited by his energetic leadership.

One of his associates says, "I would place Bob Hodgson in first rank as neighbor, citizen and community leader."

Arkansas Producer Sells Neighbors on ASA Program

Crawfordsville, Ark.

August 20, 1959

Mr. David R. Farlow
The Soybean Digest
Hudson, Iowa

Dear Dave:

On my way home from St. Louis I had a mental review of our conversation concerning the promotion of the American Soybean Association. I was so much impressed with the different people that I met while there and with the overall program that I started telling my friends and neighbors what a fine job you people were doing on the behalf of all of us. One thing led to another until I just decided that I could sell the Association to them myself. So for the past two days I have spent some time doing a selling job. The list on the next page are the new members from Crawfordsville and vicinity.

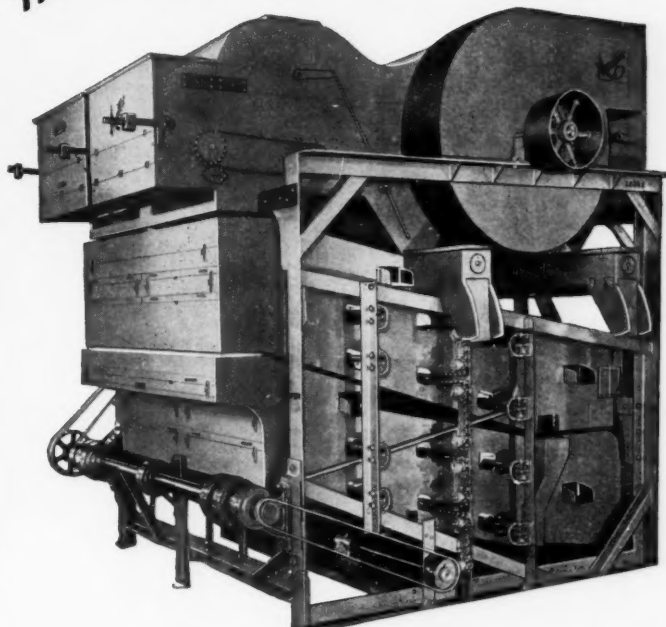
Do not accept this effort as one to be applied to the contest of submitting names for new subscriptions as was advertised at the convention. I want you to consider this as an effort of one grower of soybeans to help you all continue and expand your fine work.

Sincerely yours,
J. W. Young, Jr.

Thank you Mr. Young for taking time out to help promote our program. The 27 new subscriptions you sent in will help raise our voice around the world, and we hope your action will prompt others to share in the work of the Association.

—EDITOR.

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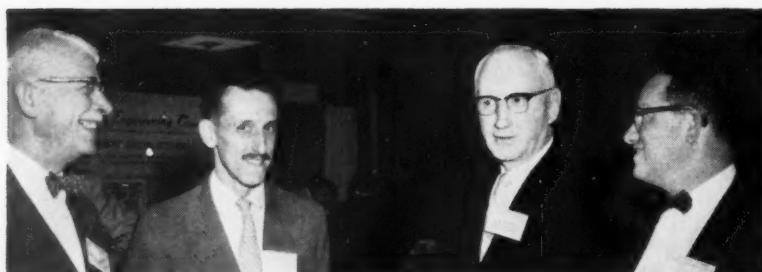
Simcox New President; Four New Directors at ASA Convention



VISITING in the Crown Iron Works Co. booth: John Lovetang of Crown; O. H. Acom, Wardell, Mo.; C. G. Simcox, Assumption, Ill.; and Meade McWilliams, Pawnee, Ill.



AT ASA banquet: John W. Evans; J. W. Lambert, University of Minnesota; and R. E. Hodgson. Dr. Lambert escorted Evans and Hodgson to receive honorary life memberships.



Edward M. James, Soybean Council oil consultant, Swarthmore, Pa.; Antonio R. Pandolfi, Samrig, Brazil; J. W. Hayward, Archer-Daniels-Midland Co., Minneapolis; and Eugene Marshack, Bunge Corp., New York City.

—All photos by Kent Pellett. Read from left to right

NEWLY elected ASA officers: Geo. M. Strayer, executive vice president and secretary-treasurer; Charles V. Simpson, vice president; and C. G. Simcox, president.

NEW ASA directors: Hubert W. Baker, Dalton City, Ill.; W. M. Wallace, Woodslee, Ontario, Canada; and Glen Myers, Memphis, Mo. Not shown is new director Harry Gatton, Jr., Rumsey, Ky.

C. G. SIMCOX, Assumption, Ill., was elected president of the American Soybean Association during its 39th annual convention in St. Louis Aug. 12. He stepped up from vice president and succeeded John Sawyer, London, Ohio, who has been a hard working president during the past 2 years.

Charles V. Simpson, Waterville, Minn., was elected vice president, succeeding Simcox. Geo. M. Strayer, Hudson, Iowa, was reelected executive vice president and secretary-treasurer.

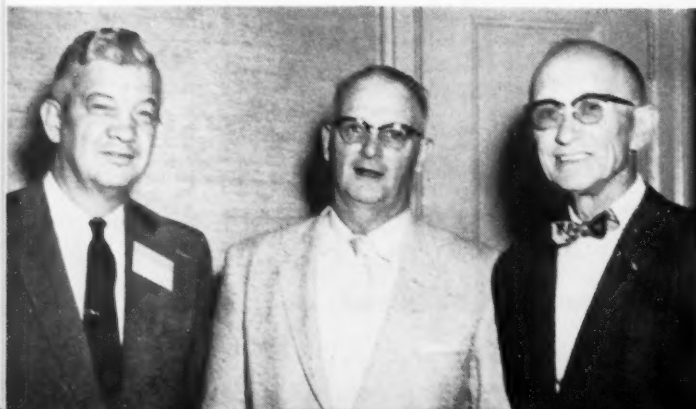
New directors elected were Hubert Baker, Dalton City, Ill., succeeding Albert Dimond, Lovington, Ill.; W. M. Wallace, Woodslee, Ontario, Canada, succeeding A. E. Jolley, Chatham, Ontario; Glen Myers, Memphis, Mo.; and Harry Gatton, Jr., Rumsey, Ky.

Myers and Gatton are additional directors elected this year. Dimond, a past president of the Association, has served on the board of directors for many years.

Directors reelected were Sawyer; Simpson; Simcox; Jake Hartz, Jr., Stuttgart, Ark.; Chester B. Biddle, Remington, Ind.; Howard L. Roach, Plainfield, Iowa; and John W. Evans, Montevideo, Minn.

Holdover directors are Strayer; John H. Butterfield, Pana, Ill.; Ersel Walley, Fort Wayne, Ind.; Walter M.

**ASA's 39th
at St. Louis**





PEOPLE register at American Soybean Association convention (left) and National Soybean Processors Association meeting. George McCulley,



ASA business manager, and Mrs. McCulley are seen at far left, and at far right are Johanna C. Glaman and Irma Crouse, NSPA secretaries.

Scott, Jr., Tallulah, La.; O. H. Acom, Wardell, Mo.; and David G. Wing, Mechanicsburg, Ohio.

Twenty-five states and Canada, Japan, Brazil, Australia, India, Italy and Spain were represented at the 2-day sessions which immediately followed the annual meeting of the National Soybean Processors Association and the National Soybean Crop Improvement Advisory Board at the Hotel Sheraton-Jefferson. This was the sixth successive year in which the two groups have held joint meetings.

ASA President John Sawyer was the toastmaster at the annual banquet, which featured musical numbers by the Strolling Troubadors. Banquet speaker was Rev. Clarence Hall, Catlin, Ill.

The St. Louis Merchants Exchange sponsored the reception preceding the banquet.

Council Board

Charles V. Simpson was elected a producer member of the board of directors of the Soybean Council of America, Inc., succeeding Albert Dimond, Lovington, Ill.

Other producer members of the Council board who hold over are: Chester B. Biddle, Remington, Ind.; John W. Evans, Montevideo, Minn.; Jake Hartz, Jr., Stuttgart, Ark.; Howard L. Roach, Plainfield, Iowa; David G. Wing, Mechanicsburg, Ohio; Geo. M. Strayer, Hudson, Iowa; John Sawyer, London, Ohio; and C. G. Simcox, Assumption, Ill.

Glenn Pogeler Heads New Processor Board

THE NATIONAL Soybean Processors Association elected the following officers for the 1959-60 crop year:

Chairman of the board of directors, Glenn Pogeler, North Iowa Cooperative Processing Association, Mason City, Iowa, succeeding M. D. McVay, Cargill, Inc., Minneapolis, Minn.

Vice chairman of the board, Donald B. Walker, Ralston Purina Co., St. Louis, Mo., succeeding Pogeler.

Immediate past chairman of the board, McVay.

Reelected president, R. G. Houghtlin, Chicago, Ill.

Secretary, William King Self, Riverside Oil Mill, Marks, Miss., succeeding Walker.

Treasurer, Scott E. Cramer, Swift & Co., Chicago, succeeding H. A. Abbott, Funk Bros. Seed Co., Bloomington, Ill.

NSPA elected the following directors to serve 3-year terms: R. E. Alexander, Pillsbury Co., Clinton, Iowa; A. M. Convis, Funk Bros. Seed Co., Bloomington, Ill.; Dwight L. Dannen, Dannen Mills, Inc., St. Joseph, Mo.; Ralph S. Moore, Soy-Rich Products Inc., Wichita, Kans.; A. I. Reisz, Ohio Valley Soybean Cooperative, Henderson, Ky.; and Irving Rosen, Quincy Soybean Products Co., Quincy, Ill.

Ralph Bruce, Archer-Daniels-Midland Co., Minneapolis, Minn., and



Mr. and Mrs. O. H. Acom, Wardell, Mo., at banquet.



THREE convention speakers at the banquet: G. E. Hilbert, USDA's Agricultural Research Service, Washington, D. C.; A. K. Smith, Northern Regional Research Laboratory, Peoria, Ill.; and T. Watanabe, Tokyo, Japan. Strolling Troubadors are in background.



A. M. Convis, Funk Bros. Seed Co., and Mrs. Convis, Bloomington, Ill., at processor luncheon.

HEAD TABLE annual ASA banquet: NSPA president R. G. Houghtlin; Mrs. Glenn Pogeler; ASA executive vice president Geo. M. Strayer; Mrs. C. G. Simcox; speaker Rev. Clarence Hall; retiring president John

Sawyer; Mrs. R. G. Houghtlin; new president C. G. Simcox; Mrs. Geo. M. Strayer; and Glenn Pogeler, chairman of the NSPA board of directors.





REPLICA of a life-sized statue of calf in Rome is presented to Howard L. Roach, president of the Soybean Council of America, Inc., (left) by Dominic Marcello, director of the Council's Italian operations at Rome (right). Marcello presented the statue to Roach for Giorgio Mortari, secretary general of Assalzo (Italian National Association of Livestock Feed Producers) which possesses the original statue. Also in the photo are (left) Juan G. de Madariaga, assistant to Javier de Salas, director for Spain; and (right) Arun K. Chhabra, Punjab, India, who will be a student at State University of Iowa this fall.

Ben R. Barbee, Anderson, Clayton & Co., Abilene, Tex., were elected directors to fill the unexpired terms of Cramer and A. C. Hoehne, Archer-Daniels-Midland Co., Minneapolis.

Holdover directors are as follows: D. O. Andreas, Honeymead Products Co., Mankato, Minn.; Sewall D. Andrews, Jr., General Mills, Inc., Minneapolis, Minn.; Earl J. Brubaker, Borden Co., New York, N. Y.; R. G. Golseth, Lauhoff Soya Co., Danville, Ill.; W. E. Hulse, Central Soya Co., Inc., Fort Wayne, Ind.; R. B.

Jude, Spencer Kellogg & Sons, Inc., Buffalo, N. Y.; Harris T. Lyon, Allied Mills, Inc., Chicago, Ill.; Donald C. Ogg, Iowa Soya Co., Redfield, Iowa; E. E. Rhodes, A. E. Staley Manufacturing Co., Decatur, Ill.; and R. B. Williams, Buckeye Cotton Oil Division of the Buckeye Cellulose Corp., Cincinnati, Ohio.

Jude and Andrews were elected to 2-year terms on the executive committee. Holdover directors on the executive committee are Golseth and Rhodes.

RESOLUTIONS

Reported and Adopted by the Convention

BE IT RESOLVED by the American Soybean Association assembled in St. Louis, Mo., Aug. 11 and 12, 1959:

We wish to express our thanks for the many speakers, governmental and private, who have contributed so ably by appearing on our program.

Our sincere appreciation to all who have served on committees in preparing the program and making necessary arrangements for the convention.

Especially do we wish to extend our sincere thanks to the Ralston Purina Co. for courtesies extended American Soybean Association members.

**ASA's 39th
at St. Louis**

Trade Relations

We urge the extension of P.L. 480 for a 3-year period with an increased level of financing to \$2 billion, this to be used judiciously in raising standards of living and encouraging stability of governments and the development of peaceful industries in needy countries of the world. This can relieve surplus food congestion for our nation, contribute to the peace of the world and build up foreign markets.

Research

We recommend a reappraisal of soybean research objectives and projects. Increased demand for protein and less emphasis on oil content cannot be ignored. Utilization considerations are continuously becoming more imperative.

Domestic

We oppose any proposal by governmental agencies which will limit or ban the usage of soybean oil or soybean protein in healthful food products for human consumption. We believe such products should be allowed to find their own levels of consumption based on quality and price unhampered by legislative regulations.

We regret the recent passing of W. J. Morse, one of our first honorary life members. We extend our sincerest sympathy to the remaining relatives. We wish to inform our membership that Dr. Morse served 40 years in the USDA carrying on plant investigation and he is credited with bringing 2,000 or more basic strains of soybeans from the Orient to the United States.—*Chester B. Biddle, chairman, Howard L. Roach, Walter M. Scott, Jr., O. H. Acom, John W. Evans, John H. Butterfield, Charles V. Simpson, A. E. Jolley.*

New Iowa Institutional Director Favors Soy Flour

A SOFT-SPOKEN Texan who favors soy flour and "inactive yeast" is the new director in charge of feeding 11,500 persons in Iowa state institutions, according to George Mills in the Des Moines Register.

He is Frank Moosberg, Galveston, Tex., who has taken charge of the dining service of state mental hospitals, prisons, training schools and homes.

Moosberg says soy flour should be used in meat loaf, bread and cakes. Adding soy to regular flour means increased protein in such foods, he says.

Similarly inactive yeast from brewer's mash in foods provides much more protein than the equivalent amount of meat, he reports. Such additions will mean more nourishing institution meals.

Iowa board of control officials expect that Moosberg will save money while maintaining the usual good quality of meals now being served.

The new director has a master's degree from the University of Texas in institutional administration. He believes time and money are often wasted in preparing meals on a quantity basis. He wrote his Texas thesis on that topic.

His most recent position was food director at the University of Texas medical branch.

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Our Tasks and Obligations Will Continue to Grow

UPPERMOST in my mind and first of all I wish to express most sincere thanks to my many friends connected with this Association—especially the staff and the many others who have, on numerous occasions, given such wonderful support and assistance during the past 2 years. This period has been most memorable to me and I shall always value highly these experiences and friendships.

Our 39th annual convention brings to a close a very eventful and challenging year. It has been one with tremendous problems and discouragements and yet it has been one full of accomplishments and satisfactions.

During this past year the American Soybean Association has, in spite of many serious handicaps, continued to carry on its work and responsibilities on behalf of its members. Representatives of our Association have traveled the world to further develop markets for our soybeans and have labored strenuously to continue to hold those markets

already established. Their efforts have been mostly successful but we are continuously reminded of the need for even more efforts along this line. Wherever possible, in spite of limited funds, the American Soybean Association has pursued those potential markets and is hopeful of continuing to do so.

Market Fund

A great help and probably the biggest contributing factor enabling us to continue this market development work has been the establishment and building of the market development fund. This fund has been made possible by many generous contributions of individuals and groups who realize the necessity and benefits of market development work. Contributions have been made in time and effort as well as money and have come from many sources. For all this we are most grateful and on behalf of the American Soybean Association we thank those who have, through their generosity, made this possible.

To further help improve the markets for soybeans producers, the American Soybean Association has continued to be active with and has assisted greatly in the activities of the Soybean Council of America of which we are one of the principal members. The Council has carried on marketing programs in foreign countries where the American Soybean Association is not represented and has supported many industry activities in the United States. It has proved to be a great help in marketing soybeans and soybean products both in domestic and foreign markets, and the future of the Council looks even more promising. Our support and complete cooperation with the Council is most necessary and it is our hope to continue these efforts wherever possible.

Beside the activities and accomplishments mentioned above, the American Soybean Association has continued to perform the many jobs and services it has always carried out. We have continued to publish the Soybean Digest, Late News and the Blue Book and our staff is continuously making reports and publishing information beneficial and necessary to the growers as well as the entire industry. The time required and the funds necessary to carry out these services are tremendous and we have difficulty doing everything we would like to be able to do.

To anyone who has ever been at Hudson and has seen our facilities it might seem we are already accomplishing more than is possible. Those who are familiar with the activities of the American Soybean Association might feel we are already doing everything that needs doing. To be true, our services to our members and our contributions to all American agriculture have been tremendous. However, we have only begun

PRESIDENT Sawyer delivers annual address. At left is Executive Vice President Geo. M. Strayer.



**ASA's 39th
at St. Louis**

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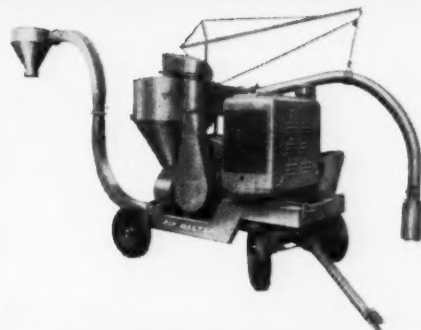
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to scratch the surface. Our tasks and obligations have and will continue to grow by leaps and bounds.

Others at this convention have pointed out and will be pointing out the dire need for action on the part of the Association. My message today is to again plead for support from all available growers and friends of our Association to help us develop this Association to a position where this action so badly needed is a possibility. We must all help publicize the many necessary activities being performed by the Association and the need for more assistance now and in the future. It must be pointed out that by joining the American Soybean Association, one not only opens up channels of information and assistance to himself but helps to develop and finance projects so necessary for our survival as growers as well as to all others dependent on the survival of the growers.

Support Needed

We need financial support and moral support and with enough of both we can accomplish the necessary goal we know is possible. The cooperation, spirit, and support demonstrated this last year under the numerous handicaps we had, is evidence that we can do what we must do.

If all soybean growers were aware of the work to be done and the tremendous benefits to be gained, and if they realized the necessity of coordinating and organizing our efforts to accomplish the things so badly needed, every soybean grower in the United States would be an enthusiastic and active member of our Association.

It is up to us, as members of this Association, to see that others are aware of the benefits available through this Association. Then we must get these people to become active members of our American Soybean Association. We must make every possible effort to support this drive, and we must be successful. With everyone doing his share we can accomplish what needs to be done, and by so doing, we will be able to enjoy the tremendous benefits available through a large, strong and active Association.—*John Sawyer, president, American Soybean Association.*

Report of the Executive Vice President and Secretary-Treasurer . . . Geo. M. Strayer

"Marketing Opportunities Lie Before Us . . ."



Geo. M. Strayer

ONE YEAR ago as we met in Des Moines we were faced with the largest soybean crop in history. It appeared we would go over the 500-million-bushel mark for the first time in history. Favorable weather pushed yields upward, and we actually produced 550 million bushels. Since that date we have worried about large carryovers of 1958-crop beans, we have had the largest monthly crush in history, we have had by far the largest exports of beans in history, and now it appears that on Oct. 1, 1959, at the beginning of the new-crop year, we will have on hand only a very reasonable bushelage of 1958-crop beans. When the smaller 1959 acreage is considered it now appears we will actually have fewer soybeans available for the next year than we had a year ago.

Thus we still find ourselves in the very enviable position of not having surpluses of soybeans. It is a position that has been our good fortune for a period of years. Every producer of soybeans in the United States has benefitted materially because we have been able to find markets for our products, and because we have not been placing them in storage to hang over our heads when the next crop comes to market.

For the first time in history we will export over 100 million bushels of soybeans as beans during the present crop year ending Sept. 30.

That means that 1 bushel out of every 5 produced on the farms of America finds its way to plants in Japan, Germany, England, Israel and the other countries of the world. This year again we will export about one-fifth of our oil production. Thus, in terms of oil, 2 bushels out of every 5 you have produced have gone into foreign markets of the world. The soybeans have all been sold for dollars, while some portions of the oil have been sold for dollars and the remainder for foreign currencies under Public Law 480.

The U. S. soybean crop has truly become an international commodity. In recognition of this the American Soybean Association has for the past 3 years been conducting the market development project in Japan, and the Soybean Council has been conducting similar programs in Spain, Italy, and now in Israel and Germany. Speakers on this program have told you of these activities, and brought you up to date on the progress made in those operations.

Japanese Program

The favorable work of the Japanese American Soybean Institute in Tokyo, which is under the direct sponsorship of the American Soybean Association, is continuing under the leadership of Mr. S. Hayashi, whom you met at our 1958 and 1957 meetings. Our present contract calls for this work to continue to July 1, 1960, and we are hopeful that it may be extended beyond that date. In addition, we have for the past 15 months been cooperating with the Oregon Wheat League in conducting the "kitchen-car" program in Japan, wherein 12 especially built busses travel over the countryside giving demonstrations to housewives on the preparation of foods using soybeans and wheat. The many programs being carried out in Japan through the kitchen-car program, the contracts with the Japan Nutrition Association, the Food Life Improvement Association and the respective trade as-

**ASA's 39th
at St. Louis**

sociations of food manufacturers have now reached millions of housewives and told them the story of the value of soybean protein and soybean oil.

Fortunately for us, the imports of U. S. soybeans into Japan during the current crop year have increased by about 10 million bushels, or by about 30% over the previous year. However, we must recognize that Japan can buy only as many soybeans as she has dollars available, and that her dollar supply is determined by our willingness to purchase Japanese goods for import into the United States.

An additional and very important factor is the banning of soybean exports to Japan by the government of Red China, and cutting off of supply channels which had since the war been shipping about one-third of the soybeans imported into Japan. Our increases have come about largely because Chinese supplies were cut off. Determined efforts are being made by some groups to restore this Red China trade. If it is restored we may find ourselves in a very different position, and we will have to use every means at our disposal to hold the market for soybeans which we have now established in Japan.

In other words, we have profited because the trade channels were broken, but we will lose at least a portion of that business unless we are not only able to compete price-wise but are also able to supply the type of soybean which the Japanese food manufacturer desires. He prefers Japanese soybeans, ranks Chinese soybeans second in desirability, and uses U. S. soybeans only because no others are available. Our varieties were not developed for the production of food products, and we must give some serious consideration to the sale of pure varieties of types needed by these food industries.

For the past 9 months we have had under the sponsorship of ASA and the Japanese American Soybean Institute, two Japanese scientists working at the Northern Regional Laboratory at Peoria. Dr. Watanabe is reporting to you, along with Dr. A. K. Smith, on this work on this program. It is a joint program between the Japanese groups, the Foreign Agricultural Service, the Agricultural Research Service, and the American Soybean Association. The studies were designed to teach us more about the problems involved in the usage of U. S. soybeans in Japan, and to find ways of properly handling U. S. soybeans so they would

be entirely acceptable by the foods industries.

An import duty of 10% ad valorem is now levied by the Japanese government on all soybeans imported into that country, under the guise of protection for Japanese farmers. It was instituted as a means of raising funds for soybean price support operations in Japan, but to my knowledge none of the monies so raised have ever found their way to the Japanese farmer, except indirectly as a part of the higher price commanded by indigenous soybean production.

Now there are elements in the Japanese Diet which are clamoring for increases in these duties. Again the protection of Japanese farmers is given as justification. Yet, Japan can never produce but a small part of the soybeans used, and the duties levied are reflected very directly in higher prices to Japanese consumers of all foodstuffs using soybeans.

We have a problem here that requires careful and immediate attention in the reaching of a proper solution. It illustrates the type of problem continually confronting us, and which we must be prepared to combat, together with the business interests within the country. It is a bit odd that the largest importer of U. S. soybeans is talking about raising prices to the people within that nation at the same time that we are preparing to market a crop on which the support price has been reduced!

Work in India

I spent about 2 weeks in October working on our project in Japan. Dave Farlow spent 3 weeks there in March, and recently Ersel Walley spent 3 weeks in Tokyo working with Mr. Hayashi. He will review the progress of that work with you in his speech on this program. We have been urged by FAS to give closer supervision to this project, and we are endeavoring to do so. Farlow will leave shortly after this convention for a month in India, where he will be in charge of a Soybean Council exhibit at the Trade Fair in Madras. At the conclusion of that visit he will spend additional time in Japan working with Mr. Hayashi and the respective trade groups. Through these constant contacts we hope to counteract some of the resistance to increased U. S. soybean purchases.

During the months of October, November and December your secretary served as a member of a three-man survey team which visited the countries of Southeast Asia to deter-

mine market potentials on soybeans and soybean products from the United States, along with other fats and oils. I represented the Soybean Council of America, E. M. Deck represented the National Cottonseed Products Association and Cotton Council International, and Val Houg-en served as a representative of the Foreign Agricultural Service, USDA. A report on that mission has been published, and a summary carried in the Soybean Digest. Following my return to the United States I spent three months in the hospital at Rochester, Minn., curing the results of an infection picked up on this trip. Since release from the hospital in March I have been very restricted in my activities, and only recently was given permission by the Mayo Clinic doctors to return to work on a part-time basis. I feel I am making good progress, and I hope that within a few months I may be fully recovered.

In the meantime the executive committee of ASA has met on a number of occasions, and the respon-



James J. Pryor and Paul R. Farlow, agricultural agents for the Illinois Central Railroad, of Mayfield, Ky., and Chicago, Ill.



PROCESSORS W. E. Hulse, Central Soya Co., Inc., Fort Wayne, Ind.; Fred Seed, Cargill, Inc., Minneapolis; and George L. Prichard, NSPA Washington representative.



N. Hunt Moore, Memphis, Tenn., engineering consultant, and son Jack at the annual banquet.



CANADIANS. A. E. Jolley, Chatham, Ontario, retiring ASA director; W. M. Wallace, Woodslee, Ontario, new director; and K. A. Standing, secretary-manager, Ontario Soya-Bean Growers' Marketing Board, Chatham.



Charles A. FitzGerald, St. Louis, Mo.; Bard Selden, Tunica, Miss., seed producer; and R. E. Hutchison, Soybean Digest, Chicago, Ill.

sibilities of maintaining the Association work have fallen on Dave Farlow, my assistant, on Kent Pellett and on George McCulley. Dave Farlow has been working at a disadvantage in that he started work with us only on Dec. 1, hence he had only a month's experience with us before I left for my hospital stay. He had many responsibilities thrown at him in a big hurry, and I am happy to say that he was willing to accept them and has done an excellent job in spite of his inexperience in this field.

Just recently we have added another member to our staff, David Bramson. He is a graduate in Journalism, has had newspaper experience, and is serving as circulation manager for the Soybean Digest. I have high hopes for him in this field, and I hope you will get acquainted with him while you are here.

There are still some major problems confronting our industry. In our exports to Japan we need more attention to variety and to reduced foreign material content. In possible exports to other Asiatic countries we face the same problems. Wherever soybeans are used for human food rather than for processing purposes, which basically is wherever there are Japanese or Chinese populations, we cannot expect soybeans of the quality deliverable under our present grades to be satisfactory. If we are going to supply a foods market, then we must be ready to do the things that are necessary in order to supply such a market.

And that brings us to a problem that has faced us for several years. We are still classifying broken particles of soybeans which pass through the 8/64-inch round hole screen as foreign material. These broken particles will make oil and meal, just as do split soybeans. They are not foreign material—they are mechanical-

ly reduced portions of soybeans. So long as we classify them as foreign material our foreign buyers will be happy to have them, but when we do so we are damaging our own cause. The problem has not been as acute as in some previous years when moisture content was lower, but it is something which we must face up to.

Grading Standards

This classification of broken particles of soybeans as foreign material continues to cause us much embarrassment on foreign transactions. It is causing the elevators, especially those at ports, much trouble in loss of time, slowdown of loadings and unloadings, it is causing some losses for producers, greater losses for exporters and handlers—and it achieves no useful purpose. The major problem involved is the development of a rapid grade determination which can be made at all levels of handling and which will not involve too much time.

Are we going to continue to hold to grading standards that just do not do the job for us? Just because a change might make it necessary for someone to spend a few more minutes in making a grade determination? When it may mean millions of dollars to the producer, the handler and the exporter? Certainly an agency with the resources of the U. S. Department of Agriculture can devise a system of grading soybeans that will more adequately do the job than the present standards. Unquestionably the broken particles of soybeans should be placed in the same category as the split soybeans, for they have the same value and are created by the same causes.

I want to remind you again, as I have in times past, that buyers of soybeans outside the United States

feel we are our own worst enemies when we continue the present system. They will offer no objection to our making the change, so long as we lower the maximum limits of foreign material accordingly. I am satisfied they will respect us for making the needed change. A year ago I urged action on this matter—and I again urge such action. We are exporting over 100 million bushels of soybeans this year—does not that size export market merit consideration and action now?

I foresee another problem staring us in the face. This year we have reduced soybean acreage, due to relaxed corn support prices and lowered soybean supports. We have a huge surplus of corn staring us in the face. Probabilities are that drastic measures will be taken to reduce corn acreage in 1960. If so, where will such acreage go? Are we going to try to solve our corn surplus problem by creating the same problem for soybeans?

Suppose we reduce corn acreage by 10 million acres in 1960. Will we have 10 million additional acres of soybeans? And if we do, what will we do with the soybeans? What would we do with a 40% increase in soybean production in 1 year? When we are just finishing up a crop year that has created some problems for us?

We can use some soybean acreage above the 1959 figure. We would not have had the reduction in soybean acreage, and the huge increase in corn acreage, if USDA officials had listened to your representatives in Washington when support prices on 1959 crop were established. At this meeting your board of directors should formulate our policies pertaining to 1960 soybean price supports and acreage, and we should immediately go to work in protecting our interests at the Washington

level. If we do not do so we may face catastrophe in our industry in 1960.

A year ago I reported to you on the working relationships between the American Soybean Association and the Soybean Council of America, Inc. I will not repeat that story, except to say that the very close working relationship has continued. The financing program of the Council has enabled it to do some of the things of which we have talked for years, but which we could not afford. It has enabled the soybean story to be told in many areas of the world, and has enabled us to take a look at market potentials in many areas never before surveyed. Continued close cooperation is a must if we are to serve the industry adequately. It is the only way in which adequate funds can be made available to promote markets for American soybeans and soybean products in other areas of the world.

Problem of Membership

The American Soybean Association is still plagued with the same problem which has confronted us for years—we need a far greater number of the producers of soybeans involved in the affairs of the American Soybean Association. We need 70,000 members rather than 7,000. We need to tell the story of what the American Soybean Association and the Soybean Council are doing to every grain handler organization in the nation, to every farm organization, to everyone who will listen, and we need to enlist their membership and support. To do this we must have manpower—and money. To effectively represent the producers of soybeans of the United States we must go far beyond today's membership level. That means hard work and an organized and effective campaign of promotion. Such a proposal is being presented to your board of directors here at this meeting.

The 1958-59 fiscal year has been in many ways a rewarding one. We have seen the dream which resulted in formation of the Soybean Council blossom into an operating organization. We have produced by far the largest crop of soybeans in history, and we have seen a high proportion of that crop disappear into the processing plants and the export markets. We have seen a dramatic demonstration of the quantity of protein which livestock producers will utilize if available at reasonable prices. Our income into the Association treasury has again been slightly larger than

our expenditures, so that your Association is entirely solvent.

During recent days the entire soybean industry has been saddened by the death of two of the stalwarts among our members. The death of W. J. Morse on July 30 saddened the entire industry. More than any other man in the United States he was responsible for soybeans as we know them today. He made the plant exploration trips that uncovered the thousands of varieties and strains of soybeans that were brought to the United States for trial purposes, and which supplied the germ plasm for all of today's varieties of soybeans. One of the first two honorary life members chosen by this Association, Bill Morse retired from his work in the U. S. Department of Agriculture just 10 years ago. His contributions to the present billion-dollar soybean industry can never be adequately appraised.

Within recent weeks we have also been saddened by the death of Coleman Crews of Keiser, Ark. Coleman was a large soybean producer, has served on committees of ASA, has attended our meetings year after year, and has contributed much to the progress of our industry. He will be sorely missed.

This Association, and every grower of soybeans in the United States, owes a debt of gratitude to the nine men who have represented ASA on the board of directors of the Soybean Council of America. Those men, serving without pay, have attended a series of meetings, have served on committees, have traveled to Washington and otherwise represented your interests. We owe them our sincere thanks.

The 15 men who serve as your board of directors also deserve your gratitude. They serve without pay, take their time from their own farming and business interests, they attend committee meetings, make trips to Washington to testify in your behalf, and in most cases receive no thanks for their efforts. These men have served you well, and they deserve your thanks. Until you have served on this board of directors you can have no concept of the time and effort which is involved.

To Kent Pellett for his continued faithful allegiance to the editorship of the Soybean Digest, the Blue Book and Late News, and for his willingness to accept additional responsibilities during my illness, I want to extend my personal thanks. To George McCulley for his adherence to business principles and his handling of business details while I was ill I want

also to give special recognition. To Dave Farlow for his willingness to accept responsibilities thrown at him before he was acquainted with them, I also owe my gratitude. To all other members of the staff of the Hudson office I can only say that I will be eternally grateful for the manner in which they continued their work during the past year.

Many people have contributed to the progress of the past year. I cannot begin to name all of them here, but to all concerned I want to say that it has been a pleasure to serve you, and I hope I may have that continued pleasure through a period of years. We now have a staff built which should enable us to do an efficient and expanding job. I hope we have the capabilities to capitalize on the opportunities which lie before us in marketing the two commodities that are still most scarce in the world food economy—fats and oils and protein. We can go as far as our vision, our foresight and our willingness to tackle the problems at hand will permit. The opportunity still is ours.—Geo. M. Strayer, executive vice president and secretary-treasurer, American Soybean Association.

Urge More Flaxseed or Sunflowers in Argentine

THE ARGENTINE government has recommended that farmers plant more flaxseed or sunflower seed this year, as these are considered more profitable than other crops, according to Foreign Agricultural Service, U. S. Department of Agriculture.

A support price of 500 pesos per 100 kilos has been set for flaxseed, but the price for sunflower seed has not yet been reported.

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Soybean Council — What It Is Doing in Italy

By **DOMINIC J. MARCELLO**

Director General for Italy, Soybean
Council of America, Rome, Italy



Dominic Marcello

WHEN WE met last year, I spoke to you about the preliminary market development activities carried out by the Council in Italy, of plans made and goals set. Now I would like to tell you briefly of results achieved, of what the Council is currently doing and how things look for the future. We have endeavored to maintain a dynamic program, studying trends and taking action deemed necessary to safeguard our interests.

As you all know, our market development program was initiated on the premise that a sizable market existed in Italy for U. S. soybeans and soybean products, that every effort should be made to retain and expand this market, that this aim should be achieved by obtaining the active participation of the Italian government and the trade.

In order to implement this program, we have constantly maintained an excellent working relationship with the U. S. agricultural attache and his staff. Contacts have been established with the trade and the appropriate Italian government ministries, including Agriculture, Foreign Trade and Commerce and Public Health.

We have entered into cooperative agreements with FEDERCONSORZI (Italian Federation of Agricultural Consortia) and ASSALZOO (National Association of Livestock Feed Producers), organizations that have as members the producers of over 90% of all the mixed feed produced in Italy, 75% of all vegetable oil and 100% of all the margarine produced.

These cooperators have proven their willingness to actively collaborate by making contributions toward the implementation of our program substantially greater than had been projected. Cooperators' contribu-

tions to June 30, 1959, totaled 40,883,-982 lire. Project budget expenditures to end of June 1959 were 23,226,845 lire.

That there is an expanding market in Italy for U. S. soybean products is reflected by a comparison of the following reported sales to Italy in 1958 and 1959 against imports made in 1957:

Soybeans: 858 metric tons in 1957; 20,000 MT in 1958; and 33,000 MT as of June 30, 1959. Soybean meal: 36,000 MT in 1957; 55,000 MT in 1958; and 50,000 MT so far in June 1959. These are all dollar sales. I will touch on soybean oil later.

The various projects included in our program, which I outlined to you last year, were either successfully implemented or activated as planned.

Fairs. Council's representatives together with technicians furnished by the Council in cooperation with FAS and the U. S. agricultural attache's office, have participated during 1959 in fairs and seminars held at Verona, Cagliari, Bologna, Trieste and Ferrara.

We will also take part in fairs in Cremona, Alessandria and Foggia.

Council's representatives, including the speaker, have also taken part in fairs held in Milan, Ravenna and Rome.

Together with Fred Marti, regional director of the Council, and Javier de Salas, director of Spain, I attended the International Association of Seed Crushers Congress held in Cannes (France) June 1-June 4, where I was given the opportunity of discussing matters of mutual interest with the Italian delegation, U. S. and European manufacturers and trade representatives as well as FAO and U. S. Department of Agriculture representatives. Among other things, I was able to ascertain that the use of soybean oil would shortly be introduced in Italy in the manufacture of Gradina margarine.

A feed demonstration project was inaugurated. This project was initiated for the purpose of showing the advantages of using soybean meal in poultry and livestock feeding.

Upon the arrival of J. Robert Smyth, who was assigned by the Council and FAS to assist in the establishment of demonstration centers, and after discussions were held with our cooperators, visits were made to prospective demonstration centers at Padova, Jesi, Modena, Rovigo, Lodi and Eboli. Plans of a proposed center to be built by Fratelli Petrucci, a member of ASSALZOO, at a cost of approximately \$40,000 at Bastia Umbria, were reviewed.

The following program was agreed on and initiated:

FEDERCONSORZI's poultry demonstration program will be under the direction of Raffaele Quilici, director of the Ministry of Agriculture's Rovigo Poultry Experimental Station. (FEDERCONSORZI is furnishing funds to employ a graduate assistant to Professor Quilici.)

The main center has been established at Rovigo with substations at Jesi, Padova and Modena.

ASSALZOO's poultry demonstration program will be under the direction of Gino Bianchi.

The first center has been established by Luigi Pezzullo at Eboli under the supervision of Dott. Agr. Ugo Milanese.

It has been agreed that all experiments and demonstrations will be conducted in accordance with management practices and feeding formulas recommended and furnished by Professor Smyth and that FEDERCONSORZI and ASSALZOO will supply at their own expense, all necessary buildings, installations, equipment, poultry, feed and personnel.

On June 30, the Soybean Council of America held its first regional

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"Competitive sources of soybean products are putting on strong campaigns"

meeting at the Savoy Excelsior Hotel in Trieste. This meeting was chaired by Howard L. Roach, president of the Council, and Dr. Marti. The persons in attendance were as follows: Robert D. Harrison, consultant to the Commodity Credit Corp., U. S. Department of Agriculture; Robert G. Houghtlin, president of the National Soybean Processors Association and secretary of the Soybean Council of America; Harold L. Koeller, U. S. agricultural attache, Belgrade (Yugoslavia); Paul J. Findlen, assistant agricultural attache, Rome; Ernest G. Moore, director information division, Agricultural Research Service, USDA; Lee McElroy, representative Grain Sorghum Processors Assn., Amarillo, Tex.; Robert D. O'Neill, trade fair manager, USDA; Lou Menna, U. S. Embassy, Rome; Javier de Salas, director for Spain, Soybean Council; and Dominic J. Marcello, director for Italy, Soybean Council.

Feed Conference

As a result of the outstanding success attained by the first mixed feed conference held in May of last year, ASSALZOO sponsored in collaboration with the Soybean Council a second mixed feed conference on May 25 to May 29, at the Istituto Sperimentale Zootecnico di Roma (Livestock Experimental Station), Tormancina, under the direction of Bartolo Maymone, director of the Livestock Experimental Station. The attendance this year, which was larger than last year, numbered about 100 technicians and mixed feed producers, all members of the ASSALZOO Association.

The Council made available for this conference two U. S. technicians, Professor Smyth and Joe W. Jones, both of whom were in Italy on Fair assignments.

Several American as well as Italian speakers alternated in delivering technical papers over the conference period.

May 26 was designated as Soya Day and the entire day dedicated to discussions on soybeans, soybean meal and soybean oil.

In view of the fact that Russian and other European soybean meals are quoted on the market at prices from \$3 to \$5 less per ton than U. S. meal, this meeting was chosen to point out and stress the advantages offered by U. S. processed meal as compared with processing methods

employed by others which justified the difference in the cost of U. S. meal. The speaker, as well as our visiting technicians, dwelt on this subject. I was able to point out that inasmuch as the members of this organization are producing high quality mixed feed which contains U. S. soybean meal, this should be made known to customers by printing the fact on the tags affixed to feed bags. Result: We have been notified by ASSALZOO headquarters that the practice suggested is being carried out by its members. Several of the mixed feed producers have sent in samples of their new tags which contain, among the ingredients listed, "Farina Americana di soya" (American soybean meal).

As you know, the problem of marketing oil other than olive oil is quite a difficult one in Italy, both from the political as well as the economic standpoint. However, our job is clear: fill the gap between Italian olive oil production and the total oil needs of the Italian people. In 1957 and 1958 we had a P. L. 480 program whereby the Italian government purchased approximately 32,000 tons of soybean oil each year. In 1959, with the assistance of FAS and the agricultural attache, the Italian government was able to obtain an allocation of \$6 million under sec. 402 for soybean oil purchases which have just been made for delivery in September 1959.

Use of margarine is gradually being accepted by the Italian housewife. Production and sales are steadily increasing. Margarine manufacturers, such as Gradina, Flavina, and Foglia D'Oro, are conducting intensive advertising campaigns in the press, radio, TV and movie shorts. Emphasis is being placed on the fact that their margarine contains only good quality vegetable oils and its high nutritive value is stressed.

At present only palm, peanut, coconut and sesame oils are used in the production of Italian margarine. Soybean oil is excluded solely for economic reasons. A cost analysis was made and it was pointed out that whereas the cost, \$508.60 per metric ton, of soybean oil is higher than other oils used, if imported as degummed oil (due to Italian government duties, taxes, etc.) this is not the case if hydrogenated oil, costing \$341.50 per metric ton, is imported.

Much interest is now being shown and the matter is being followed

closely. As a matter of fact, soybean oil was used to manufacture margarine for the first time last month. This is a good potential market.

A further market for soybean oil is being developed in the manufacture of shortening. Shortening is not available on store shelves. None is produced for such retail sale. However, we are now being constantly contacted by Italian manufacturers requesting information and data concerning the production and packaging of shortening along U. S. lines. I believe there is a great future for shortening in Italy.

To Livestock Economy

The gradual shift from a wheat to a livestock economy and the continued acceptance of balanced mixed feeds by the farmer are factors contributing to an expansion of the Italian mixed feed industry, which should continue to accelerate. A bigger and better Italian market for soybean products is forecast for the future.

The trend seems to be toward more and more processing of soybeans with facilities available in Italy. Whereas in 1957 there was practically no soybean processing, there are now at least six important Italian plants either working soybeans or making plans to do so. Realizing their lack of technical know-how, especially in the field of soybean meal processing, several Italian organizations are negotiating to enter into participation agreements with members of the Council.

We shall continue to make every effort to fill these requirements with U. S. products, by making dollar sales, sec. 402 sales, P. L. 480 sales and/or barter arrangements.

It must be borne in mind that competitive sources of soybean products, especially Russia, China and Yugoslavia, are putting on strong campaigns. Their prices and terms are better than U. S. quotations and more attention is now being given to quality which, in the case of soybean meal, is inferior to ours. We must be ready to meet this competition by offering high quality products at competitive prices with unexcelled service.

We must remain always alert to take advantage of Italy's soybean market development by having "the man with an order book" ever present.

A wide field is open to U. S. businessmen . . .

The Oil Market in Spain in the New Economic Situation

By JUAN S. DE MADARIAGA

Assistant Director of Spanish Operations,
Soybean Council of America, Inc.,
Madrid, Spain

DURING the last few years Spain has been the main importer of soybean oil from the United States. The purchase of this oil has usually been carried out by the Supply Board which is the organization for controlling trade and distribution in the whole of Spain.

These purchases were done under P. L. 480 because of the fact that, as everybody knows, Spain has been short in dollar currency.

As at present Spain is undergoing new economic measures adopted by the International Monetary Fund and OEEC, we are going to analyze the possible consequences of this new situation on the Spanish soybean oil market.

The liberalization program published by the press and explained by the Spanish Minister of Commerce consists principally in the following points:

- 1—Free trade.
- 2—Reduction of custom duties for several goods.

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Juan S. de Madariaga speaking, ASA president John Sawyer (center), and Council's director of Italian operations, Dominic Marcello.

3—Encouragement of foreign investment.

Free Trade. The measures taken by the Spanish government toward free trade are mainly represented by several lists of merchandise that are being published periodically.

The merchandise included in those lists can enter the country without any direct restriction on behalf of the government. Up to now several oilseeds have been included in these lists, e.g.: flaxseed, castor-oil seed, hemp seed, poppy seed, and other oilseeds for industrial uses, and other oils such as copra, coconut and palm kernel.

It is possible that the Spanish government may include soybeans in the forthcoming lists but up to now we haven't received any information to that effect.

Other products such as soybean meal may be liberalized considering the enormous shortage of protein feed for livestock and poultry that Spain is undergoing.

Soybean oil is in our opinion a commodity not very likely to be liberalized as the Spanish government will do its best to maintain its purchase under local currency.

Lecithin could probably be liberal-

ized taking into account the pressure of the chocolate manufacturers.

Reduction of Custom Duties. The custom duties for some goods have been reduced; the list of the new tariffs is available at the Spanish office of the Soybean Council.

Foreign Investments. A wide field of possibilities is now open to American businessmen in all of the Spanish industries and mainly in the soybean industry.

There is a strong tendency toward the import of soybeans instead of the soybean products already manufactured. Many Spanish businessmen come to our office concerning prospects for American capital investment in Spain.

In the new regulations of foreign investments the Spanish government allows up to 50% to be owned by foreign hands and in exceptional cases even 75%. Here is a suggestion for the progressive American industry, here is a new way of opening a market through investment in such a good business as soybean products have proved to be in Spain.

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Arun K. Chhabra

The Scope of Soybeans in India

Mr. Chhabra, who helped with soybean exhibits in India, will enter the State University of Iowa this fall.

By ARUN K. CHHABRA

Nangal Township, India

AT THE Soybean Council booth here at the convention we have shown some of the activities of the Council in promoting the use of soybeans and various soy products in different parts of the world. A quick glance at the pictures displayed there would be sufficient to convince you of the tremendous reception of soybeans by the Indian people.

So far the Soybean Council has participated at two fairs in New Delhi and Calcutta. I had the privilege to work for the Council at both these places, first with President Howard L. Roach and then with Fred Hafner of General Mills.

A little less than 2 million people attended the fair at each place. From the poor peasant to the Prime Minister everyone evinced a keen interest in the soybean story. One farmer who grows soybeans, mainly to supply seeds to some interested parties, after having heard about soybeans at the U. S. exhibition in New Delhi came all the way from Kashmir to Calcutta, a distance of 1,400 miles, to see the soybeans for himself and inquire concerning their possible use as a supplement to the diet.

Among the people who came to see the fair were some who were interested in one kind of machinery, and others interested in another. But practically everyone was interested in soybeans. At Calcutta alone we distributed 200,000 pamphlets, mainly among adults. At our booth we had hung up some signs, notably, "Soybeans for Healthy and Strong Bodies," and "Soybean Story—A Possible Solution to India's Food Problem." Scores of people would gather around the booth and ask for an explanation.

We had kept the soybean oil, soy flour and toasted soy proteins side by side on a table and we would explain to the people the importance

and use of each of them. Particularly we told them that 2 ounces of soy proteins when mixed with a pound of rice double the protein content of the food and that 2 ounces would cost only 1½¢ in India. Many people took coins from their pockets and asked for the vials. Needless to say they felt disappointed when we told them that we did not sell them. I also was not happy over this. I know of two kinds of sale, one where the seller immediately delivers the goods and the other where he promises to do so at a future date. But here I was all the time singing songs of soy proteins and urging the people to use them and yet neither could sell them nor give any assurance of selling them at a future date.

Women Interested

Among the visitors were many women, a large majority of whom were interested in soybean oil, soy flour, soy milk and various other baby foods. Though occasionally some of them would ask a question about a certain process, their questions mostly ranged from odor and taste to the price of soybean oil and soy milk.

Now where there are men and women naturally there were children, too, who above all were interested in doughnuts. In collaboration with the wheat people we prepared large quantities of doughnuts daily and distributed them freely among children, students, special invitees and some other institutions such as orphanages and hospitals.

Elaborate though the fair exhibit may seem, it was just a part of the Council's activities. In order to create a market in another country you have to have (a) a genuine demand by the general public, (b) cooperation of the local business and industry, dealing in the same kind of article, and (c) approval by the government.

Encouraged by the response of the general public we began to make

contacts with industry and government. In Calcutta Mr. Hafner made contacts with some oil mills and the National Council of Women, an organization that runs cafeterias in many parts of the country. Also he went to Mysore to meet with the people working at the Indian Food Technological School—a very important and useful contact established earlier by Ersel Walley. Mr. Roach in Delhi not only tried to win over Prime Minister Nehru but also tried to get approval of the allocation of funds for importation of soybean products into India.

So much about the activities of the Council. Now with your kind permission I would like to add a few words of my own about my country, its people and the present situation regarding food and agriculture. India as you all know is not really a country in the true sense of the word. Subcontinent would be perhaps a more appropriate name for the southern peninsula of Asia. Its area is larger than the whole of Europe. The culture and way of living is basically one and the same throughout its length and breadth, yet languages are as different and varied as in Europe.

Indian people suffer from both general and specific hunger, the symptoms of which are perceptible everywhere. The ravages of hunger range from a tragic indifference to life to various kinds of disease such as tuberculosis and beriberi. Average consumption of calories per person is between 1,500 and 1,700 while the minimum requirement is 3,000 calories per day. Specific hunger is mainly due to the deficiency of proteins.

Most of the population is vegetarian and though the number of cattle is larger than anywhere in the world, religious proscriptions, both Buddhist and Brahmanist, help keep down the consumption of animal protein. Thus the diet in the North mainly consists of whole wheat

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bread and vegetables, while in the greater part of the country rice is eaten with vegetables and with small quantities of vegetable oils and fish. However, as there is comparatively more consumption of milk and its derivatives in the North, the people are healthier than their brethren living in the South.

The question of population has so frequently been raised and often overemphasized that sometimes it appears to me nothing but an excuse.

To know of the true importance to India's social and economic structure one must look at the facts. India's population is 360 million, twice as many as that of the United States with an area of only three-fifths of this country. It can be seen that her average relative density—295 per square mile—though not low, is not among the highest in the world. It is exceeded by many countries, including the relatively prosperous nations of Belgium, Holland and England. What then keeps India down is the rural economy.

Till recently land was divided in extremely big holdings or ridiculously small ones. In the first case it was mostly owned by a businessman who oftener than not lived away from it, and having other means of income never paid any attention to its improvement. In the second case it was always a subsistence farm for a family of six or seven living on an equal number of acres.

An ancient mode of cultivation and too much dependence on rain are some of the other factors for low yield. Year after year we have crop failure either due to drought or heavy rainfall and often due to both in the same season in different parts of the country. Cherapunge in the province of Assam gets as much as 500 inches of rainfall a year while the desert area of Rajasthan scarcely gets a few inches. Lack of fertilizers is yet another factor.

Indian Resources

It is therefore not true that India has exhausted her resources. By proper legislation, improved and extensive methods of cultivation and with the help of chemical fertilizers the yield per acre can certainly be raised.

Beyond her agricultural opportunities there are her very considerable mineral reserves. In manganese ore India is the richest country. Its iron mines can compete favorably with those of the Rhine Valley. Oil is estimated to constitute 3% of the world potential supply. Her potential water power is 27 million horse-

power, equal to that of the United States.

You might then as well ask what we are doing to tap all these resources. My answer is that we have not been sleeping. In 1947 at long last, India became free to fashion her future as she would, and since then we have increased our food output by 18%, industrial output 24%. There are many fertilizer plants and water valley projects coming up.

By enumerating all this, however, it is not my purpose to suggest that we have done wonders. There are

many other countries that have excelled in that field. But how many have carried out so stupendous a task in democracy as we have done in India? I am proud to remark that while this experiment has failed in many of our newly born neighboring countries, the democracy in India stands as a firm rock.

Coming back to our topic, food output is bound to go up further within the next few years. While we will overcome the general hunger of our people, it is in regard to specific hunger that you can help us.



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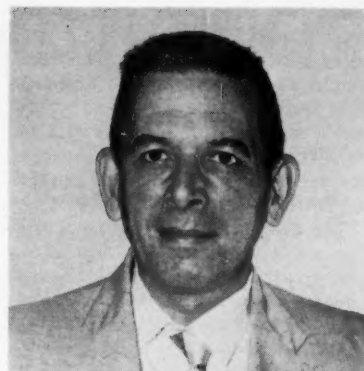
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Foreign Market Development and U. S. Oilseeds and Products

By **RUSSELL J. HUDSON**
Marketing Specialist, Fats and Oils Division
Foreign Agricultural Service



Russell Hudson

PPROMOTING trade and developing markets is an integral part of industry in a free enterprise economy. But many U. S. businessmen have found that developing foreign markets is a much more complex proposition—and a more costly process—than a strictly domestic venture.

International business is done to suit laws, rules, regulations, decrees, and edicts, not only of the importing nation but also of the selling countries which are in competition with the United States. That's where the complexities come in.

Thus, developing a market in a foreign country might, and frequently does, involve an outlay of capital in excess of that which the individual firm could invest. Lack of adequate capital is one of the biggest factors limiting expansion—or even survival—of a business.

Public Law 480

That's where section 104(a) of Public Law 480 comes in. The Congress recognized this situation when it provided federal assistance to U. S. industry to help develop new markets in friendly countries for U. S. agricultural commodities.

In effect this federal market development aid to industry is nothing more than an assist—and never was intended to be any more than temporary. As custodians of your tax money, we are obligated and certainly attempt to use this money wisely.

With industry cooperation, we want to help promote U. S. oilseeds and oilseed products in all foreign countries where we have a reasonable chance of establishing a permanent dollar market. And as long as this money is provided, we, with industry cooperation, shall objectively seek out areas of the free world as

potential dollar markets for our surplus agricultural production.

Federally acquired foreign currencies may not be available in the years to come, but while available we want to use this money to help U. S. producers and processors to get established in foreign markets.

But let's get back to what you as producers and processors, through your trade organizations, are doing in market development work.

In your cooperative enterprise with the Foreign Agricultural Service, you are spending money—but more than that you are providing management and technical personnel to:

- 1—Participate in market-potential surveys.
- 2—Conduct trade fair exhibits.
- 3—Supervise country and regional market development projects.
- 4—Make and maintain overseas industry contacts at both the executive and technician levels.

We in the Foreign Agriculture's fats and oils division and top level people in FAS and the Department concerned with fats and oils market development work are interested in all U. S.-produced oilseeds and oilseed products. However, in view of large production of soybeans and soybean oil, our primary market development activities have to date revolved about this billion-dollar miracle crop. These efforts are principally with the full and excellent cooperation of the American Soybean Association and the Soybean Council of America, Inc.

Within the framework of these broad, objective activities, your industry is primarily responsible for, and is busily engaged in, numerous continuing programs and one-shot assists, all designed to vigorously promote export dollar sales of U. S. soybeans and soybean products.

The American Soybean Association's soybean project in Japan is in its third successful year of opera-

tion. Japan has about doubled her imports of soybeans from the United States since 1953—moving from about 400,000 tons in 1953 to just short of 800,000 tons in 1958. And indications point to our exporting about a million tons to Japan in 1959.

In the 1953-57 period, China's exports to Japan multiplied eight times—from 25,000 tons to 200,000 tons. A spat between the two countries in 1958 cut the trading volume to 50,000 tons.

China Threat

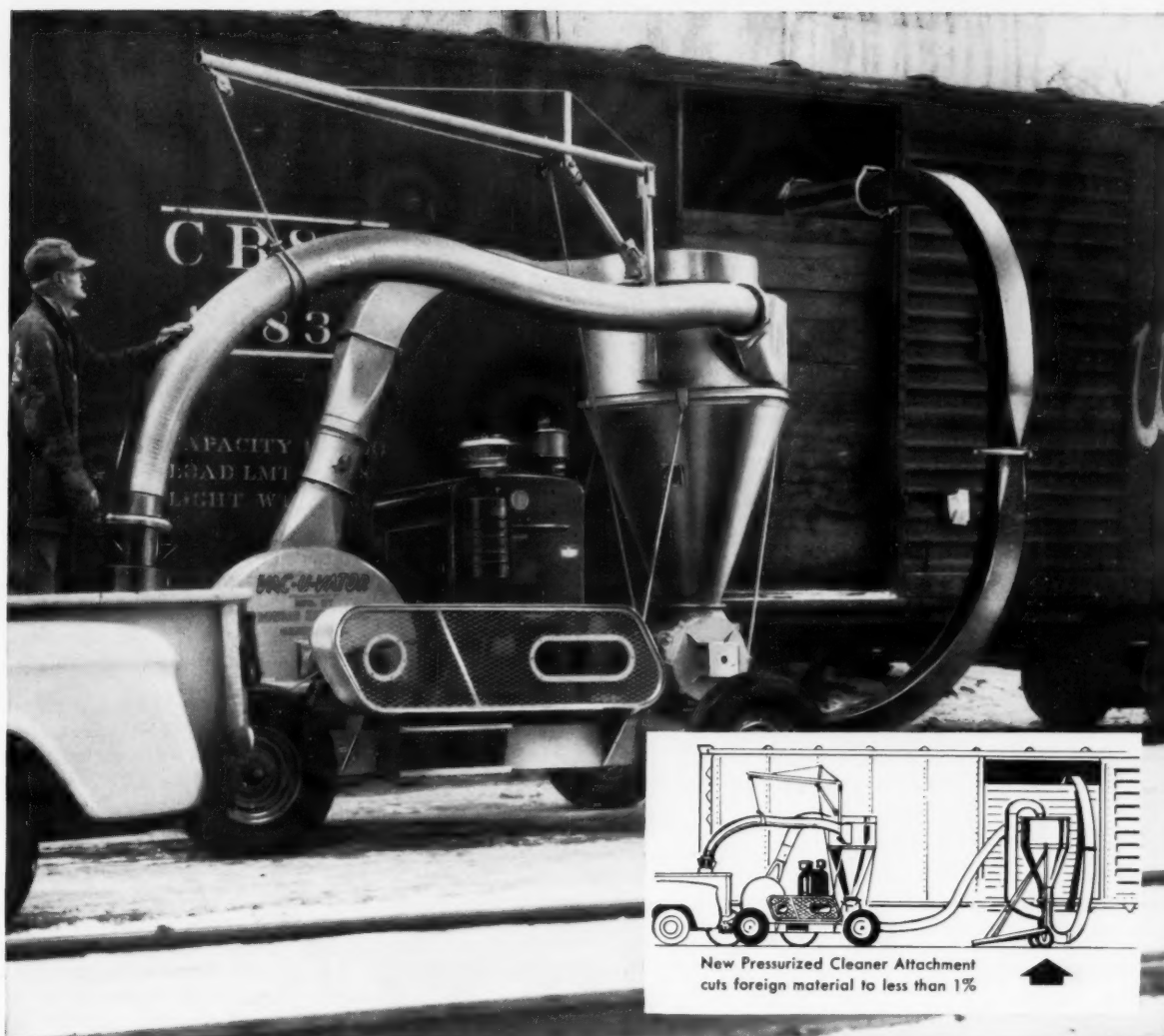
But any way you analyze it, the competitive threat of China to our soybean market in Japan is there and challenges us to not only maintain our present level of soybeans to Japan but materially increase them. Japan's principal use of soybeans is for food. Soybean meal is the basic ingredient in tofu, miso, natto and other similar foods. However, to get much needed fat into the Japanese diet, their government is urging use of the whole soybean in food uses.

The "hard-sell" technique must continue. Quality must be improved. Varieties of soybeans appropriate to Japanese utilization must not only be improved—but should be rapidly produced in a volume sufficient to meet their needs.

The Soybean Council's projects in Italy and Spain are 2 years old. Your industry has provided fine leadership and good programs to promote soybeans, soybean meal and soybean oil in Italy and soybean oil and meal in Spain. As in Japan, local industry groups are very active in cooperative promotional activities from the research and educational level on through to consumer education.

This year Spain bought its first soybean meal—notwithstanding that ICA dollars were used to effect the purchase. Additionally, Spain has

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recently permitted for the first time the sale and use of soybean oil, as such, without requiring that it be mixed with olive oil.

Italy's purchases of soybeans and soybean meal are showing signs of progressive increases from year to year.

South America

The Council's project activities in South America are just 1 year old, but only 2 months ago, Peru bought its first dollar soybean oil. This purchase is directly attributable to technical assistance provided by the Council through a shelf-life demonstration experiment. Colombia and Chile appear ripe for additional soybean oil business and have asked that the projects in those countries be continued another year.

New Council projects have just begun in West Germany and Israel. In Israel, for instance, a very good table oil has been developed from soybean oil and the Israeli Oilseed Crushers Pool and Israeli government are cooperating with the Soybean Council to push ahead for consumer acceptance of this and other soy products. Already Israel requires that 5% soy flour must be mixed with wheat flour. The Israeli annual fat intake per person is 33 pounds compared with about 45 pounds in the United States. The Israeli government is determined to increase this up to the U. S. level in the next few years—and soybean oil should

be the means of their doing it. This represents a per capita increase of about one-third.

Three hundred eggs per year are eaten by the average Israeli and Israel's population is increasing by about 100,000 people annually. This can and probably will mean a continuing increase in soy protein requirements in their balanced poultry feeds.

West Germany is the best customer of the United States in terms of combined imports of U. S. soybeans and soybean oil, but again here is a market that China is cultivating. Through intensive and comprehensive efforts by the Soybean Council working with the German Oil Millers Association, somehow we've got to beat down the competition from China. Other market development opportunities exist in other parts of the world. The FAS looks forward to substantial increases in the undertakings of the industry to develop these other new markets.

You are to be heartily commended and congratulated in having the vision and the courage to act on that insight in pushing soybeans and soybean products into world markets.

Though relatively new, these trade promotional and market development activities are already producing results—and will surely show increasing returns in the next several years.

But much of your interest un-

doubtedly lies in what's immediately ahead!

Now let's look at the prospects as we see them for exports of soybeans and edible oils in the coming marketing year.

I think that 1959-60 will be another good year for U. S. exports of soybeans and edible oils. In fact, it wouldn't surprise me if exports of soybeans rise above the record quantity of about 105 million bushels that are going out in 1958-59. Exports of soybean and cottonseed oil also will be strong and probably won't differ greatly from the record quantity being shipped in 1958-59. This is based on the premises that the major importing areas, such as Western Europe and Japan, will continue to need to import very large quantities of edible oils and oilseeds and that they won't be able to obtain increased supplies from non-U. S. sources.

First, let's run through the key commodities in the foreign exportable supply picture.

Certainly, sharply reduced exportable supplies of copra have been one of the key items influencing the level of U. S. exports of edible oils and oilseeds to Western Europe in the past 2 years. The decline in copra reflects extended drought in the Philippines, increased domestic use and transportation difficulties in Indonesia and drought and diversion of labor to other activities in Malaya and Singapore. Western Europe's imports of copra and coconut oil as a consequence have been drastically reduced from the 1957 peak of 821,000 metric tons to 582,000 in 1958 and we expect the level to drop to 450,000 in 1959.

This decline of about 375,000 tons, or 45%, from 1957 to 1959 is equivalent to the oil in 75 million bushels of soybeans. It has been compensated for mainly by increased imports of U. S. soybeans and soybean oil although trade in (African) peanuts and peanut oil also has come up somewhat. We do not look for any great change in exports of copra and coconut oil before next summer. A temporary pickup might take place this fall and winter but we would expect a rather sharp downturn after that.

These forecasts are based on our estimate of the effects of weather conditions to date in the Philippines, and take into account resumed exports by Indonesia. Even the supplies probably forthcoming from the U. S. stockpiles of coconut oil will not do much to alleviate the shortage in the world copra situation since

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they represent only a small part of the total, and it appears sales will be extended over a considerable period of time.

We're looking for only a small additional increase in exports of palm oil and palm kernels. Strong price levels for these products, reflecting the tight copra situation, apparently are encouraging exports of these oils.

It doesn't appear likely that there will be increased exports of peanuts and peanut oil. The West African peanut crops were relatively large in 1958 despite the fact that they were somewhat below the record level of the previous year. In addition, there was a subsequent carryin of peanuts from last year which added to the total supply. Hence, total supplies in this area in 1958-59 were among the highest of record. Consequently, even if there should be some pickup in peanut production this year from the high levels of a year ago, there may not be any increase in exportable supplies.

India can be pretty well discounted as far as substantial exports of peanut or other edible oils are concerned. There may be a small increase in availabilities from the Union of South Africa. Argentina, on the other hand, is currently in a deficit position at least until her new crops come in next year. Nearly 100,000 tons of peanut and sunflower oil were exported from that country in calendar 1958.

The Olive Crop

We're looking for a near record olive crop in the Mediterranean Basin this year with most of the increase coming in Spain, Italy, Greece, Tunisia, South America and Portugal. However, net trade in olive oil is small and the major effect of an increase in olive oil output is to cut

the import requirements of oilseeds and vegetable oils in this generally deficit area.

Exportable supplies of rapeseed in 1959-60 are likely to be down, mainly because the Canadian crop is expected to decline. Canadian farmers reported that they expected to plant 40% less land to rapeseed in 1959. Even if yields are higher than last year's relatively low ones, they are still likely to come out on the lower side as far as production is concerned. We expect Swedish rapeseed to be up, but this should be offset by a decline in France.

China, of course, is the usual question mark as to the size of her crops and the level and destinations of her exports. No doubt all of us are familiar with the fantastic production claims that they made last fall. Still, even after discounting them, production probably was up from the year before. Even so, by no means have they flooded free world markets with their supplies. Recent information indicates that China sent more soybeans and soybean oil to Russia and Eastern Europe in calendar 1958 than the year before. Soybean movements through the Suez Canal this year are larger than last year. Certainly the Chinese communists can readily consume all they produce. Political considerations and the need for foreign exchange continue to be the most important factors in determining the level of Chinese soybean exports.

All and all as far as we can determine at this time, it does not appear likely greatly increased supply of edible oils and oilseeds will be available to importing countries from sources other than the United States in 1959-60. So much for the supply side.

The outlook for foreign import requirements of edible oils and oil-

seeds appears good from the U. S. point of view. Apparently the level of imports in Western Europe from last fall through the beginning of this spring was below what was needed to meet consumption requirements and there probably was a substantial drawing on stocks. This no doubt reflected the tight copra situation as importers tried to get by what they thought was a relatively short period of tight supplies.

Unfortunately for them, the tightness in copra has continued well beyond expectations and a need for replenishment with other oils and oilseeds no doubt has been felt. Current levels of U. S. exports of soybeans may very well reflect this fact as well as the lack of Chinese beans for Japanese imports.

Another factor that will help us move out commodities into export channels is the reduced support level for 1959-crop soybeans—24¢ per bushel lower. Reduced supports on soybeans and increased supplies of cottonseed oil should enhance our competitive position in world markets.

We expect that Northwestern Europe will continue to make heavy dollar purchases of U. S. soybeans and edible oils in order to meet consumption requirements. And we also expect to maintain our excellent market for soybeans in Japan.

P. L. 480 Movement

We anticipate a very heavy movement of edible oil under P. L. 480 despite the expected large increase in olive oil output in our key program country—Spain. For example, the olive crop in Turkey, another important taker of oil under P. L. 480, is likely to be down this year and as a consequence, we may have a larger program there. Also, there is a possibility that the tight copra situation may enable us to expand as well as create new P. L. 480 programs. In addition, there possibly will be a sizable carryover on Oct. 1, 1959, of edible oil that has been programmed.

With a continuation of the full cooperation of the trade, we preliminarily estimate that we will program in the neighborhood of 700 million pounds, in addition, of course, to the expected carryover of the previous program.

With competitive prices and assured large supplies, we should be able to look forward with confidence to satisfactory levels of exports of soybeans and edible oils.

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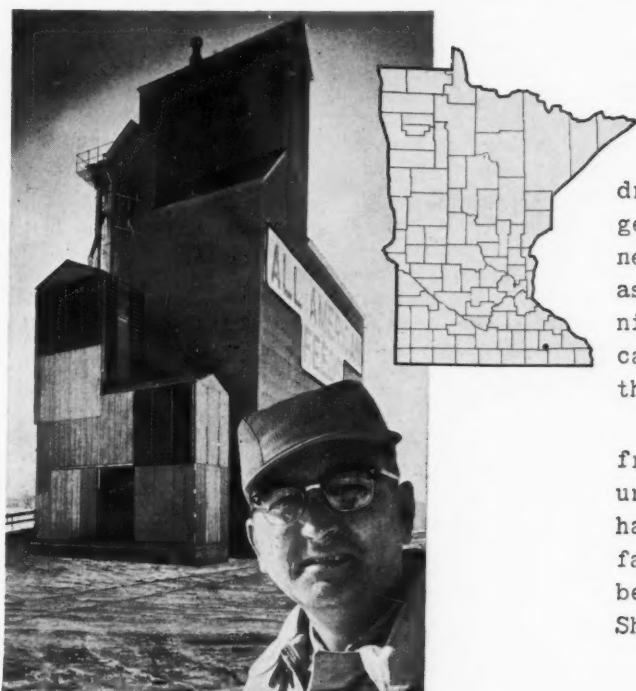
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How Much Protein Can We Use in America?

In the future we may be more concerned about amino acid yield, less about bushels produced

By **ELMER R. KIEHL**

Professor, Agricultural Economics,
University of Missouri



Elmer Kiehl

DISCUSSIONS in recent years about the importance of proteins in plant and animal life have increased. These discussions about proteins have generated also a concern about the role of proteins in fighting the Cold War with Communism, the crucial role of protein in the soil, plants and animal relationships, the explanation of business cycles, namely booms and depressions in terms of protein usage, and finally the sober and scientific discussion and speculation that the nucleic acids of protein hold the very secrets of life and reproduction of animal cells.

An analysis of how much protein we can use in America is obviously a most difficult task.

Certainly it is a question in which the soybean industry is interested. Knowledge of needs is necessary in projecting *long-range* plans for the industry. Any industry which does not constantly review its longer-run prospects will likely find its opportunities for exploiting markets diminished.

What is the opportunity for increase in the demand for proteins for human consumption? According to a National Food Consumption Survey conducted in 1955, it was found that protein intake was adequate in 92% of all households (families). In only 8% of the households the pattern of the diet was such that it did not furnish the recommended dietary levels of protein. However, diets tended to be inadequate for certain amino acids for low income families. Twenty-three percent of the households with annual incomes under \$1,000 were deficient in protein.

On the whole, dietary levels have improved tremendously during the last 2 decades as a result of a number of factors. Average real incomes have risen (after adjusting for price changes) so that more families, par-

ticularly of the lower income groups, could enjoy better diets. Increased consumption of meat, poultry and fish contributed to improve protein levels in the diet. People generally are more aware of the need for proper assortment of foods for health.

The prospect for increased *per capita* consumption of protein is not large inasmuch as only 8% fell below recommended protein dietary levels. Continued rising incomes will allow many families in this category to improve their diet. Expanding population will, of course, increase the total demand for protein. Increasingly we will, no doubt, become more concerned with the balance of proteins (i.e., amino acids) and quality of proteins and their role in maintaining a higher level of health.

Inasmuch as protein can be obtained from a number of sources, the question always raised by competent nutritionists in both human and animal nutrition is the one concerning adequacy and balance of protein, more specifically, amino acid adequacy and balance.

In a market economy such as ours the problem then becomes one of meeting the adequacy criteria with minimum cost. The ultimate source of final demand for protein is the perpetuation of the human species. Fortunately in this country we are concerned less with the matter of *adequate supply* but more with cost and possibilities of alternative and cheaper sources.

Let's look at alternative possibilities of sources of proteins or systems that modify the plant and animal complex that has the prospect of increasing protein sources.

Possibility 1—Soil Treatment.

There is the possibility of increasing total supply of proteins in this country by raising the fertility level of our soils. Protein substances are largely nitrogen. Some research workers in plant nutrition have sug-

gested that to feed the plants (that is, grass and grain crops) in this country would require nitrogen fertilizer application of two and possibly three times present levels. Some people have speculated that by increasing fertilization rates, protein supply could be increased.

There is a formula often used to illustrate the relationship of nitrogen to protein. $\frac{\text{Pounds of nitrogen}}{5} \times 6.25 = \text{Crude Protein}$. For example, if we take the total pounds of nitrogen applied to soils in 1955 and use this formula, we come up with 2.3 million tons of crude protein added to the total plant and seed output of this country. Converted into soybean meal equivalent, this means 5.1 million tons of soybean oil meal.

Before we become alarmed about this possibility as a means of contracting the market for soybeans, we must remember it is the total contribution of nitrogen to crude protein feed supply. Even if by magic we doubled nitrogen application next year and produced another 5 million tons of crude protein, it would not mean that the percentage of protein had increased by twice in the forage plants and seed crops. It does mean we would have more tonnage of forage and seeds.

Certainly the major result would be increased supplies of feed and forage, and possibly some increase in total crude protein on a percentage basis. Obviously a larger animal population could be supported. I don't minimize this possibility of increasing the protein supply by this method. Increased nitrogen application to plants which are genetically efficient in converting nitrogen to crude protein is a possibility for increasing the percentage content of various types of feed and forage crops.

Possibility 2—New Plants and Genetic Improvement of Plants. New plants have been introduced into our

agriculture which have improved our protein supply sources. Lespedeza as a forage crop has contributed greatly in providing improved green forage and hay. The soybean, originally introduced as a hay crop, now is prized for the qualities of its seed. The soybean crop, as you well know, is now the largest single source of plant protein for feed formulations in this country. It is also fortunately one with the highest general quality of proteins.

Efforts to bring new plants into our agriculture are continuing. Who knows, we may find commercial use for a plant now overlooked—one that will be a cheaper source of protein.

Another facet of increasing the supply of vegetable proteins is through the efforts of plant breeders. Geneticists have demonstrated that it is possible to modify the chemical composition of our traditional feed and fiber plants. For example, it is possible to increase the oil content of corn or soybeans. Similarly, the protein content of wheat or oats can be increased through changing the genetic makeup of the plant.

The crude protein content of corn is usually indicated at slightly less than 9%. Plant breeders have increased the crude protein of certain strains to as high as 20%. It appears that when crude protein is increased above 12% however, that the yield of corn is decreased. Some people have suggested that maybe we should attempt to grow corn with higher proteins and rather than to maximize the total yield of corn it might be profitable to maximize the total pounds of protein produced per acre. Certainly this might be a useful objective in reducing the total supply of carbohydrates of which we apparently have a surplus.

If it were possible to raise the percentage of protein of corn produced in this country by only 1% it would have a tremendous effect on protein supplies. Every 1% increase in the crude protein of corn produced in

this country would be equivalent to 1.8 million tons of soybean meal (46% basis). If it were possible to raise the protein content of corn from the present 8.8% to 12% protein (apparently this is genetically feasible without a marked decline in yields) it would be equivalent to the protein in the soybean meal produced last year!

Before we become alarmed at this speculative possibility, I should point out that the protein in corn is notoriously poor quality. Furthermore, as the protein content of corn is increased, the quality of the protein declines even further. In any event, the proteins in corn would have to be supplemented from vegetable or animal sources unless geneticists can overcome this tendency of deterioration in protein.

Geneticists have found that the oil and protein content of soybeans can be increased also within limits. Again, as the composition of beans is changed, the total yield of grain tends to be reduced just as in corn.

Possibility 3—Synthetic Sources of Protein. Over the years there has been considerable speculation about synthetic foods. It is possible to synthesize from various sources a large number of essential amino acids. Indeed, the cost of methionine has declined from \$40 per pound in 1953 to less than \$3 per pound in 1957. This reduction in cost of synthetic methionine has encouraged its use in mixed feed to improve the protein balance of animal feeds.

Similarly, lysine which was priced at \$240 per pound in 1953 was quoted at \$12 per pound just 4 years later. Some nutritionists expect that the cost will fall substantially below this figure in the future resulting in its use in prepared feeds to balance the shortage of this essential amino acid in animal feeds from cereal sources. We should remember that as yet these are now used for supplementation rather than as a basic source of protein.

FACTORS THAT WILL INCREASE DEMAND

LONG RUN

- 1—Growth in human population.
- 2—Rise in real incomes so that opportunity for improvement in protein levels through increased meat consumption can be achieved.
- 3—Awareness of people to improved protein levels and balance in diets for better health.

SHORTER RUN

- 1—Growth in livestock numbers. (Projecting the 30% increase in livestock numbers by 1975 to soybean production, we could well require 750 million bushels of soybeans to meet the need.)
- 2—Shift from extensive type feeding programs to confinement feeding, particularly for hogs.
- 3—Sales abroad will remain as important outlets for some vegetable proteins. Certainly the development of foreign markets for soybeans will become more important.

FACTORS AFFECTING SUPPLY

LONG RUN

- 1—Development of alternative sources of protein, through improved soil nutrition.
- 2—Modifying plants genetically so as to increase the quality and percentage content of protein.
- 3—Improvement in processing techniques and lowering of relative production costs.
- 4—Development of cheaper synthetic proteins for supplementation and improvement in balance.

SHORTER RUN

- 1—Price and costs of competitive proteins.
- 2—Role of price support programs.

These are merely illustrations of the possibility of this source supplementing and balancing the relatively poor proteins of the cereals in the animal rations. Presently sources of many of these essential amino acids now come from soybean meal which from the standpoint of its cost and its wide range of adaptability to fill this need makes soybean meal an unparalleled protein source.

In the shorter run the market for soybeans and other vegetable protein sources faces a favorable situation. Presently soybean meal has a major share of the vegetable protein market in animal feeds. Expanded use of soybean meal will be encouraged



NATIONAL Soybean Crop Improvement Council Advisory Board met at the same time as NSPA. Here are some of the men in attendance.

by increased confinement feeding of swine. This source for increased demand for vegetable proteins resulting from the shift from pasture feeding to confinement feeding of hogs could be substantial.

In the case of beef cattle, dairy cattle and sheep the protein requirements are not as critical as compared to poultry and swine. Indeed, use of urea in ruminant feeding allows these animals to synthesize a significant part of their protein requirements. If confinement feeding becomes more commonplace in beef, dairy and sheep feeding operations, more protein will have to be supplied in prepared feeds to replace that formerly obtained from green forages.

The mainstay in the short run of increased use of soybean and other vegetable proteins will be, of course, from the increase in livestock numbers. Increased feed grain production in the immediate past and in the foreseeable future seems to assure expanding livestock numbers.

Probably a more relevant question than how much protein we can use is the question of where we will obtain sources of protein for animal feeding (direct human consumption of protein from vegetable sources

will likely not increase). It becomes a question of where because of the ever present pressure of cost reduction in animal feeding. I suspect we shall continue to see expanded interest in alternative means of filling the protein needs in animal feeding, particularly through genetic development of higher protein cereal grains and more extensive use of synthetic amino acids in feed formulations. The extent to which these develop depends partly on relative costs of alternative sources.

As for filling the protein requirements of the human population the prospect of increasing levels of real incomes means that we can afford, in contrast to many other countries, the "luxury" of obtaining a large share of our protein needs from the consumption of meat, milk, eggs. Certainly meat, milk and eggs have more appeal to most people than direct consumption of cereal and vegetable proteins.

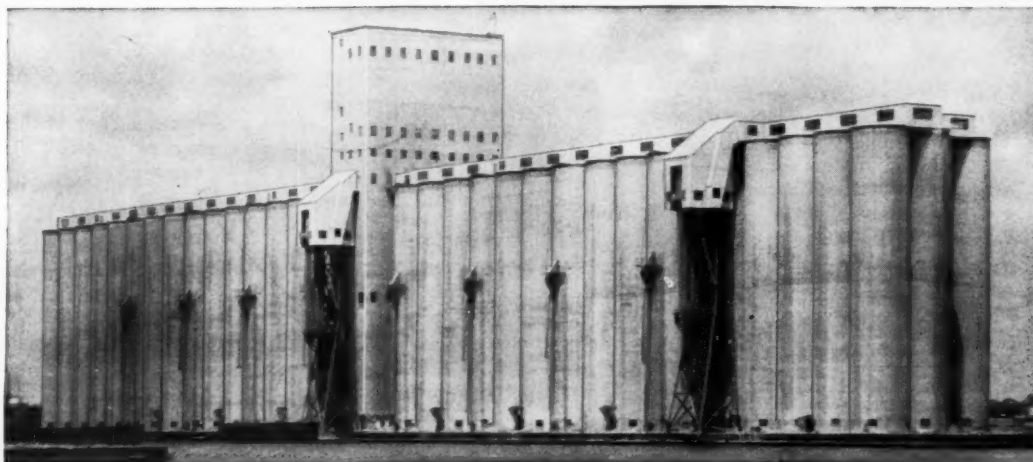
In viewing the business of protein production and in filling our protein needs, we will likely become more concerned in the future about production of amino acids for adequate animal and human diets. The soybean industry is presently in an enviable position as a supplier of

many of these for animal feeds. It must remain alert to impending developments. It is my impression that this industry is alert to its opportunities and has developed a wide awake merchandising program particularly aimed at serving foreign markets.

But as we look to the future, certainly increased research on improved genetic makeup of the soybean plant, improved production methods, improved crushing and processing technique is involved. It might be that as we move increasingly into some complex chemical formulations of feeds, as we increase knowledge of animal and human nutrition we may want to be more concerned about the amino acid yield of the industry and less about mere bushels of soybeans and tons of soybean meal and oil.

The ultimate basis of competition rests on the technical ability of this industry to meet the challenges of this type and to perform the task of a great supplier of proteins competitively with others. This may be the challenge to the industry in the 1970's. I feel certain your industry is capable of meeting this kind of challenge.

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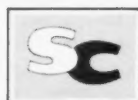
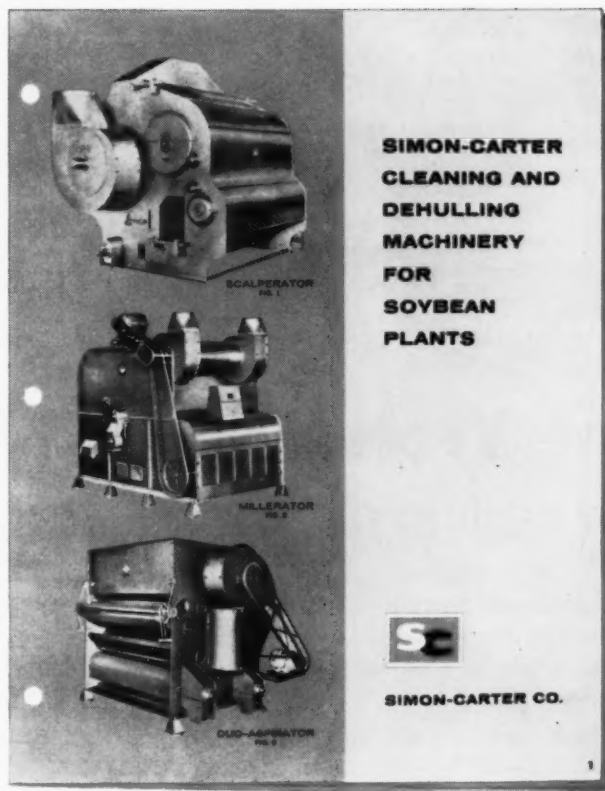
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WALLEY with world map in background used to illustrate his talk. Map was made by his daughter Sandra.

Mr. Walley saw early
the possibilities of
the export market for
U. S. soybeans, and has
made repeated trips
abroad in behalf of
those exports

The World Needs More Soybeans!

By ERSEL WALLEY

Chairman, Market Development Committee
American Soybean Association

WITH SOYBEANS now "in surplus" and with the impending urge to shift increased acreages from corn, cotton, and wheat into soybeans, it behooves the soybean grower to take a hard look at the possibilities of developing wider usage of soybeans both at home and abroad. Today it is our job to consider the possibilities of the foreign market. Accordingly let us take a quick look at the world, picking up such facts as we can and from these facts draw the most plausible conclusion possible. In doing so let it be understood that the term "soybeans" refers to "soybeans and/or soybean products."

We start with Japan because it comes first in traveling west around the world and because in this country we have our first foreign market development project. Japan is carrying out the most complete campaign of education for better human nutrition at household level of any country in the world. Cooperating in that program are the soy food manufacturers, the fat and oil producers, and exporting-importing firms along with the American Soybean Association.

Through the medium of the Japanese American Soybean Institute these cooperators have initiated and stimulated the most widespread and aggressive promotion of the use of soybeans as a human food ever carried out anywhere. This whole afternoon session could be devoted to a narration of the detailed accomplishments of the Japanese American Soybean Institute.

It is significant to point out that during the period in which the per-capita daily consumption of fats increased 1.5 grams in the Japanese diet, the import of soybeans from the United States increased approximately 10 million bushels annually. If you will take the time to figure it out, you will find that the increased annual intake of fats related here requires the identical oil content in the increased imports of 10 million bushels a year.

Japan Potential

The potential market for soybeans in Japan is tremendous. Public opinion and sound governmental policy will ultimately dictate larger allocation of dollars for the purchase of soybeans and all restrictions on purchases may be removed. The immediate additional needs are esti-

mated at 50 million bushels annually and some very confident people feel assured that Japan, within a few years, will import a minimum of 200 million bushels of soybeans annually.

In both South Korea and Taiwan, U. S. soybeans are being supplied for food uses on a subsistence year-to-year basis. There are those of us who believe our interest in these countries must necessarily be on a more permanent basis. Both countries represent opportunities to greatly increase the importation of soybeans from the United States as a prerequisite to rebuilding their processing and food manufacturing industries, thus adding to the economic stability of these countries. Larger expenditures for U. S. soybeans now would in the end result in savings to the American taxpayer.

In going around the world, no one can ignore Hong Kong—it is the crossroads of the Far East. Our contacts with many food manufacturers there indicate clearly that they prefer to "buy American." The sales of American soybeans could definitely be increased in this international market. Just now we have an invitation to participate in the annual Hong Kong trade fair. I'm hopeful that the American Soybean Association can be instrumental in sponsor-

**ASA's 39th
at St. Louis**

ing an educational exhibit on soybeans at this fair.

Furthermore, we think of Hong Kong as a logical location for an American Soybean Association representative promoting the wider use of American soybeans as food among the large Chinese population in East Asia. Here we are thinking of the nations outside the communistic orbit. These are Thailand, Burma, and other countries and islands to the east and south extending into the Malaya peninsula.

In these countries we find a population of over 200 million with an average per-capita food consumption which rarely exceeds 2,000 calories a day. The market potential for soybeans among the Chinese population is almost unlimited. Among the non-Chinese population there is some dislike of soy foods as such, but even so the potential need for proteins and fats in the diet is present. It matters not whether the soybean nutrition is furnished through soy milk, through frozen desserts, enriched bread, or blended cooking oils. The need is still there and American soybeans could supply that need.

India, Pakistan

In the past year our previous emphasis on India and Pakistan as potential markets for soybeans has been fully confirmed. In these two countries, there are over 485 million people with an average daily consumption of less than 2,000 calories per person. The diet, as is true of most of the world, is high in starch. Nutritional experts state that the human body cannot fully utilize more than 1,200 calories in starch daily unless balanced with proteins and fats. During our stay in India last winter, we demonstrated that high protein flour could be used in the native bread with success and to the liking of the Indian people. At the Calcutta trade fair, Fred Hafner clearly demonstrated to the public that higher value could be secured in the native diet and at lower cost by including soy protein.

The most experienced and best qualified nutrition experts in India conclude that to do a good day's work, women workers must have a minimum food supply of 2,450 calories per day and men workers must have 2,750 calories, this diet to include adequate proteins and fats. As these countries industrialize, they have no choice except to provide adequate and properly balanced foods in order to secure required labor efficiency. Here again soy-

beans offer the most economical and dependable source of supply.

These countries are on the march. The demand for better food standards is mounting. When the value of more protein and fats in the diet is demonstrated, the potential market for soybeans is practically unlimited. Howard Roach and I were privileged to review trade outlook reports which indicate that by 1975 India alone would require imports of edible fats annually equal to the current annual production of soybean oil in the United States. Notwith-

standing the current unfavorable trade balance of India, there is substantial evidence that India may surprisingly soon become a cash customer. Not too many years ago both Europe and Japan had similar dollar shortages and today they are both cash customers for tremendous quantities of American farm products.

We cannot pass over the Middle East without special mention. Here, including Egypt, there are 80 million people with protein and fat needs somewhat comparable to those found in India. In spite of strong national-

ORDERLY MARKETING OF SOYBEANS ASSURES A SOUND INDUSTRY

The general technique of moving soybeans through the normal channels of trade by government assistance in the marketing of the oil fraction is of tremendous significance. It is vastly superior to the system devised primarily for grains and cotton of government *loans and CCC acquisitions*, for the following reasons:

1—The increase in net farm income is greater than any possible government costs.

2—More soybean meal is available at reasonable prices, thus providing better balanced rations and better net returns to livestock and poultry producers.

3—The soybean crop moves into consumption and not into government storage.

4—Exporters and importers of soybeans are commercial buyers in the open market—not "bar-gain hunters" from government hoards.

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istic tendencies, the food needs of the people will have to be filled through some source or other. Eventually some of their natural resources, especially petroleum, will be traded for vital feed and food needs, and American soybeans are in a preferred position to meet those needs. The American University at Beirut, with students from all over the Middle East, is definitely interested in demonstrating the value of soybean meal in livestock and poultry feeding. It is none too early to start a program of education on the value of American soybeans for food and feed in the Middle East.

Council in Israel

Market development work for soybeans under the sponsorship of the Soybean Council of America is already underway in Israel. Public bakeries are required to include 5% of soy flour in all bread. This country has a small population, but with its aggressive and intelligent campaign of education, Israel can become a key demonstration of the usage and value of soybeans.

Turkey and Greece, with a total population of 33 million, are in a strategic position to receive "the best" from us. Surveys made by us and others clearly indicate that American soybeans stand high on the list of things classified as "the best." It is gratifying that the value of soybean proteins will be demonstrated at the trade fair in Salonica this September under the supervision of the American Farm School there. In Greece, as elsewhere in the Mediterranean Basin, we sense a decline in the importance of olives as an economical source of edible fats.

The whole of Africa is a field in which further surveys should be carried out on behalf of American soybeans. It is already known that undernourishment and malnutrition generally prevail. There is the same deficiency of protein and fat in the diet. Likewise, there is the same upsurge in demand for more and better foods. Certainly where such a need exists among 160 million people in Africa there are opportunities for us, especially since Africa has so many nonfood resources which can be developed for world trade.

Europe, with nearly 300 million people, is now our largest buyer of soybeans. The introduction of soybean oil in Southern Europe, the

demonstration of the value of soybean meal in feeds, and the extended use of soybean proteins and fats in the human diet all over Europe can have but one effect. That effect is a constantly expanding market for American soybeans whether processed here or in Europe. We have good reason to believe that the demand for soybeans in Europe will grow by leaps and bounds in the coming years.

Before crossing the Atlantic, let us be reminded that behind the Iron and Bamboo curtains there are nearly a billion people, a vast majority of whom have food needs similar to those we have already described. Differences in form of government and political domination do not change basic human needs and requirements. In the communistic countries, there may be opportunities for us undreamed of and impossible at the moment. It is not reasonable that agricultural production can be increased under communism fast enough to meet the demand of more people for more and better food.

On our side of the Atlantic we have Central and South America and the Caribbeans with nearly 200 million people in whom we have a close and direct interest. Preliminary surveys made by representatives of the government and the soybean industry indicate that there are tremendous opportunities to develop markets for soybeans in the countries to the south.

Elsewhere in the world and outside the Iron and Bamboo curtains there are over 900 million people, a large percentage of whom are suffering from undernourishment and malnutrition. Almost without exception in all these countries there has been a recent accelerated migration from the farms to the cities. In all these areas there is a mounting demand for more and better food. As industrialization increases, adequate and proper diets become a prime requirement. The United States can never supply enough soybeans and other edible proteins and fats to meet the actual needs of these countries. It seems reasonable that 200 million of these persons must be supplied with the equivalent of 2 bushels of soybeans per year. Certainly this outlook of an increased annual usage of 1 billion bushels of soybeans in the world appears less far-fetched than it did 2 years ago.

Considering the opportunities and the needs, we have up to now done

too little too late. Our farm surpluses are costing American taxpayers considerably over \$2 million a day. From the report made to the Congress on P. L. 480 activities, we note that from the time of enactment of that law to the end of 1958, we exchanged farm surpluses for something like \$3 billion in foreign currencies. Of this amount only \$52 million were allocated for market development and of this only \$16 million were actually spent. This situation appears ridiculous when you realize that during the same period farm surpluses cost the American taxpayers over \$3 billion for storage and interest on investment alone.

We fully appreciate the contribution of 1/20¢ a bushel being made currently for market development work. With soybeans worth \$2 a bushel, this contribution constitutes 1/4,000 part of the farm value of our products. Somehow we must raise more money to do more work and eventually it will be done. Sentiment is increasing for legislation setting up marketing boards on a state or federal basis with automatic per-bushel checkoff contributions for market development as is now being done in Ontario and in many of our states by the wheat growers.

If we could divert 30 or 40 million acres of our land from unneeded crops to soybeans, which the world needs, our farm problem would tend to disappear. It would be a boom to American agriculture and to all those industries associated with it if our agricultural resources could be fully employed with a ready market to absorb that production. Both soybean growers and industry and the American taxpayer can afford to put more money into these projects.

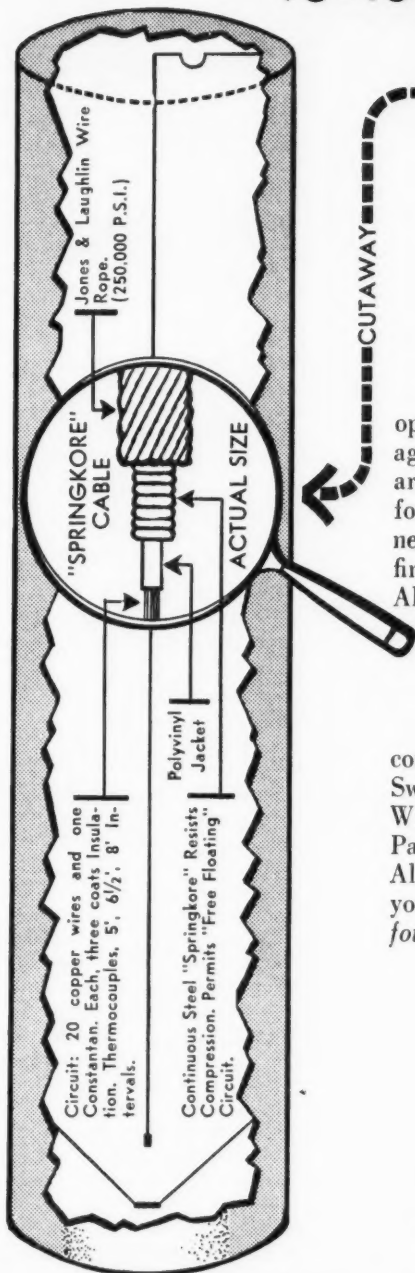
As important as is money are all the men to promote and direct these programs. We need more and more men who understand the problems and opportunities around the world. I'm thinking of men who can give technical assistance—men like Jim Hayward, Dr. James, Jake Krider, and many other. We need more men with imagination and enthusiasm such as Fred Hafner, Mike Deck, and Dr. Miller. We need to recruit more men like Marti, Marcello, de Salas, Hayashi, and Farlow. The day of dreaming about foreign markets for soybeans is passing. The time of realization is appearing and can be hastened by intelligent and aggressive efforts on our part.

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Another Look at Selling

Dr. Pickrel urges the American Soybean Association to undertake a program of education on farm markets and the future of the soybean industry

By LUTHER J. PICKREL

Extension Economist in Public Affairs, Institute of Agriculture, University of Minnesota



Luther J. Pickrel

ONE OF THE biggest jobs facing agriculture is that of selling non-agricultural groups and individuals on the positive aspects of our industry. Recent editorials and articles in *Time*, *Life*, *Look*, and *Reader's Digest* indicate that a strong sentiment may be building up against agriculture. While most of these comments are supposedly directed against the "high cost of unsound programs," they serve to paint a black picture of farmers and agriculture in general.

Admittedly, there are some serious questions to be raised with regard to present farm programs, but these editorials are beginning to show more and more signs of being against all farm programs. And whether *Time*, *Life*, etc. want to admit it or not there is a farm problem.

If this problem is to be dealt with effectively it requires the understanding of producers, processors and consumers. Decisions need to be made on the basis of understanding—not the lack of it. Considering that the number of farmers is declining in both real and relative terms, that family ties between farm and non-farm groups are not nearly so strong as in the past and that we already see signs of serious cracks in the once solid farm bloc of our national and state legislatures, the importance of a "good press" and general public support can scarcely be overemphasized.

One writer (Professor Ernest Englebert of California) suggests that perhaps the first political consideration for agriculture to observe is "that as a political minority it needs to be proportionately more watchful of its political strategy and power base than if it were a majority group. Agriculture should frankly recognize the dangers of becoming a politically isolated and narrow-minded interest group."

Your particular group, it seems to

me, has a special concern with this warning. A case in point is the problem confronting one of your important customers (margarine) which is "legal" (by this of course I refer to the sale of colored margarine) in all but two states, but like divorce, it's still not respectable in many places. As a matter of fact, some of its most vociferous opponents are to be found among farm people and other rural residents. And what's more, some of the very farm people opposing this product actually depend on soybeans for a good share of their income.

Minnesota Experience

About a year ago, one of our Minnesota extension specialists had this experience. He had talked at a meeting of farmers in a southern Minnesota county, and the question of farm markets came up in the discussion period. After the formal meeting was over, one individual approached the specialist and said he certainly hoped that margarine could be kept from competing with butter. The specialist then asked the farmer how many soybeans he raised, and it turned out that the farmer averaged about 25 or 30 acres per year. He kept around 15 milk cows, and with a little figuring it was determined that this farmer's return per hour of labor was \$3.40 for raising soybeans compared to 59¢ for the dairy enterprise. In addition, it was found that he had produced a total of 6,000 pounds of vegetable fat compared to 4,500 pounds of butterfat. (The reader should keep in mind, however, price differences on a per pound basis do exist.) Yet the importance of soybean market outlets had never occurred to this farmer.

In the interest of political well-being, agriculture can ill-afford such family squabbles. And, more specifically, the potential growth of the

margarine industry is hampered when the community producing its ingredients is torn by disagreement.

Is not the farm community an area of selling that you have overlooked? Have you really given it the constructive attention it needs?

Many Minnesota farmers are surprised to learn that Minnesota produced 16.9 pounds of soybean oil for every 10 pounds of milkfat in 1958. They become thoughtful when they realize that soybeans were harvested from over 3 million Minnesota acres in 1958, and 1957 income from soybeans exceeded \$109 million.

It is my belief that a fuller realization by the farm community of facts such as these would result in a more tolerant regard of all phases of the soybean industry. This is a selling job!

Few people, rural or urban, are fully aware of the many jobs performed by the soybean. Soybean products are present at virtually every meal eaten in the United States—as shortening, salad dressing, table spreads, desserts, cooking ingredients, breakfast cereals, etc., contributing in many ways to our nutritional needs.

In industry, the soybean has countless uses. A partial list might include: livestock feed, paints, lubrication compounds, medicinal oil, cosmetics, plastics, soaps, linoleum, adhesives and pharmaceuticals. In addition, new uses are constantly being found.

To make these facts better known is a selling job!

It is my impression that this area of selling neglect is worthy of more consideration than you and other groups have given it. Further, I feel that you have some very sound possibilities open to you that should be considered. To be more specific I suggest that you are neglecting not only an opportunity to improve the

acceptance of your product, but to develop a larger, better informed, more articulate and constructive membership in the process. For example, among other things you might consider an educational program for young people among such groups as 4-H and Rural Youth. Through the development and carrying out of such a program, you could accomplish a number of things:

1—By involving young people, you involve their parents, relatives and friends. Through educational work with them you also contact the members of their community, persons attending the county fair, contacts through such special events as achievement day, and of course, the broad contacts of state fairs. In addition there are other groups such as FFA which I have not even mentioned. Surely such a program would be worth a great deal to any commodity group, agriculture as whole and the general public.

2—In learning about a commodity, it is reasonable to expect that past inhibitions would disappear and a sympathetic attitude would develop for those constructive and worthwhile characteristics of the commodity and for the organizations and people connected with it.

3—An understanding of the policies and programs relating to the commodity. Such understanding can be expected to increase support for better legislative programs relating to the commodity.

4—A larger and better informed future membership in this and related associations.

I think the same ideas could apply to most commodities and suggest that some groups appear to be taking more advantage of them than yours.

Promote Understanding

My professional interest is to promote better understanding of domestic policy and marketing, international trade, and foreign policy, which are so important to us all. I feel that one way of doing this is to apply these principles to a particular commodity. I also feel that young people today have a vital stake in becoming better informed on these issues. It has been stated that our relatively low level of economic literacy is both an indictment of our educational efforts and an impediment to formulating agricultural policies, both domestic and foreign, which broaden opportunities for producers and processors of agricultural products.

With this bit of background, I

would like to outline to you briefly some efforts that we have been making to set up a pilot project to accomplish some of these ends. The aim of the project is to acquaint older 4-H members with the marketing system that facilitates the movement of a commodity (in this case soybeans) from producer to consumer. In addition, a considerable portion of the project will deal with the future of the soybean industry. Attempts will be made to determine potential growth in various sections of the industry.

The soybean was chosen for this pilot project because of a combination of characteristics:

a—It is generally important, both in terms of income and utilization.

b—It is grown over a large geographic area.

c—It has many uses.

d—It is important in international trade.

It is my opinion that many of our young people have the desire and the capacity to advance into areas of market and policy information. In the past, rural youth projects have been oriented almost entirely towards production; virtually no attention has been given to the farm

animal after it has been raised or to the farm crop after it has been harvested.

But what happens to the commodity after it is ready for market? It stands to reason that the young producer should become familiar with those mechanics of marketing and the characteristics of demand which will largely determine the amount of income he can expect to receive for his efforts. It stands to reason that every producer ought to learn who his prospective customers are, and what they like. He also needs to know and understand the public policies, both foreign and domestic, that affect his pocketbook and his general welfare. And it seems reasonable to assume that the young citizen will be better equipped to fulfill the responsibilities of citizenship as he develops a broader understanding of the vitally important role played by such commodities as the soybean in contributing to the nation's—and world's—economy.

In brief, it seems to me that we face the problem of developing and offering a project which will help the participant achieve a better appreciation of the economic importance of his products, a fuller under-

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standing of product marketing and distribution and a deeper recognition of his responsibilities as a citizen and a businessman in an economically interdependent world. Through the soybean it will be possible to relate public affairs to the interests and aspirations of rural youth in a constructive and meaningful way. The active interest of the individual in his own farm products will provide the ideal foundation on which to build a sound and rewarding education program.

In the process of attempting to draw together the necessary information, a number of factors became evident:

a—A lack of necessary information on certain aspects of the economic forces that come to bear on soybean markets. We found the need for a more complete and accurate measurement of demand and supply forces, the effects of government programs on soybean prices and production, the impact of foreign markets on current and prospective soybeans prices and production. One of the accomplishments of our project to date has been to interest others in doing more research in these areas. Professors Learn and Cochrane of the University of Minnesota have, in fact, drawn up a proposal for a research project in these areas. It is my hope that someone will provide the necessary support to see that this research is undertaken. I believe that these men and the department that they are a part of possess the necessary skills and interest to see this job well done.

b—A lack of information in usable form about the various facets of the processing and distributing industry.

c—A lack of "tools" (visual aids, etc.) to aid in getting the story across.

We have contacted a number of individuals and groups as we have attempted to assemble the basic information for this project. Among others, we have talked with the Honeymead people and have been gratified at their interest and support. For example, they prepared for us a kit of 24 vials showing the various components of beans and the products of meal, flakes, oil, etc. into which they are divided. We have made some preliminary efforts to interest various agencies in participating in the project and providing incentives to attract participants and to give the kind of constructive publicity and rewards that such effort deserves. For example, after going through such a course or project it would seem to me that a young man

or woman would make an excellent emissary for the soybean industry by visiting potential customers here and in foreign countries.

We feel that the effects of a successfully operated marketing education program would be:

1—A greater understanding of the industry itself (in this case soybeans), and from understanding will come greater respect.

2—A better understanding of the role of U. S. agriculture in international trade, and how we affect and are affected by trade policies.

3—A fuller understanding of modern day agriculture and its role in the economy, better equipping young men and women for the policy choices they will need to make.

May I suggest that you might benefit by giving this type of program adequate consideration.

Postscript for "Selling Abroad"

In preparation for my few remarks here today, I attempted to familiarize myself with some of the things said by speakers during the past few years at the various conventions held by your association and by related associations. I marvel at the topics you have covered, at the alertness reflected in these talks, and at your interest in the long run problems and welfare of your industry. Your acute interest in foreign markets and trade as reflected in topics for these 2 days here in St. Louis is understandable. However, I would like to interject a precautionary note against failing to distinguish between real market development, soundly conceived, which can endure on its own merits as opposed to becoming overly dependent on such deceptively "easy" markets as P. L. 480.

It is significant how shipments of soybean oil under this program have increased. Soybean oil was first exported under P. L. 480 auspices in 1955-56. During that year 279 million pounds were shipped. In 1956-57, 494 million pounds were shipped, and in 1957-58 this increased to 595 million pounds.

Even more impressive is the fact that P. L. 480 shipments are comprising an increasing share of total soybean oil exports. In 1955-56, 50% of total exports were under P. L. 480. The next year this increased to 61.4%; and in 1957-58, 74.1% of soybean oil exports were due to P. L. 480* operations. Can you effectively defend such trends in today's politi-

* Source: *The Soybean Bluebook—1959*, p. 48.

cal environment? But even more important, is this a healthy development for the long run interests of your industry? (For a more detailed discussion of this see "Soybean Price Supports Should Be Reduced," by T. A. Hieronymus, Mimeograph, University of Illinois, 1958.)

I have been attempting to do a little research in this area and have other reasons for my interest in trade, market expansion, etc. Although this is not the main theme of my remarks it is close enough to impel me to make a few observations. In my work with general farm organizations and more specific commodity groups, I find what is an understandable but at the same time a disturbing tendency for many of us to fail to recognize certain conflicts in our values and in our ambitions.

Iowa Poll

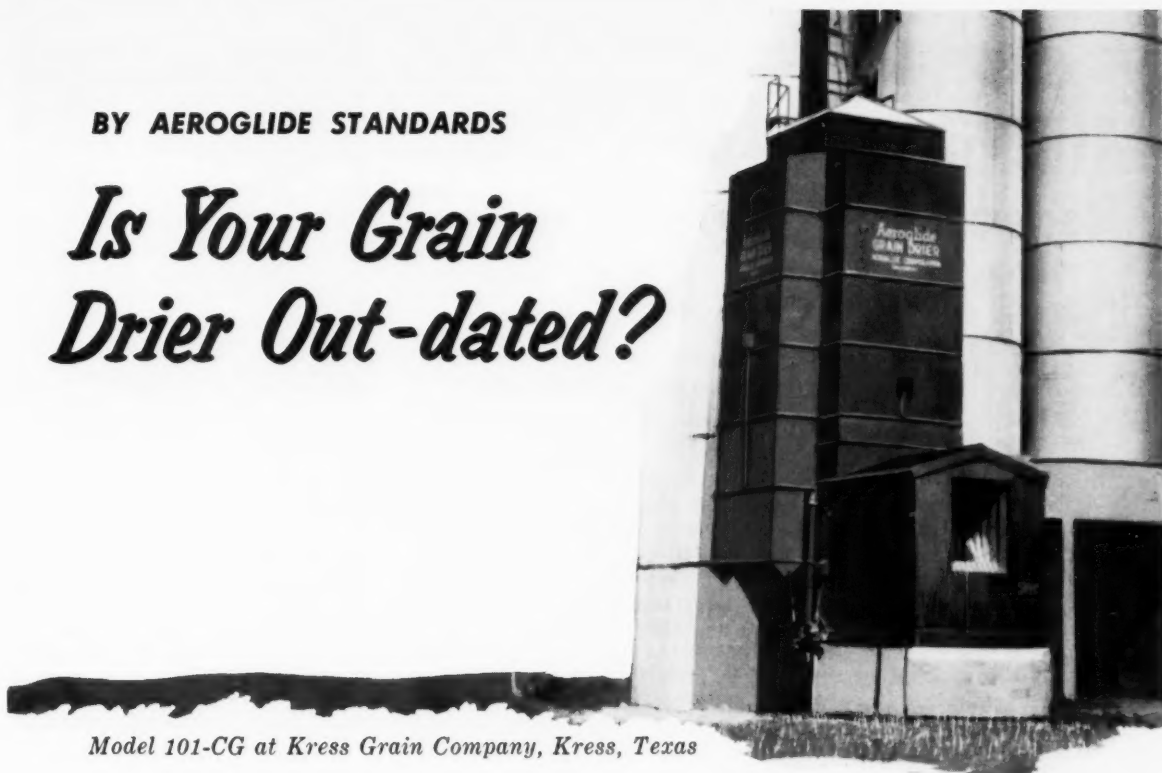
First let me give an illustration that is of a general nature and then attempt to specify some of the implications for your industry:

Professor Ogg of Iowa reports on a poll of public sentiment in that state in which residents were asked to check three out of six choices for cutting federal expenditures. "Foreign aid" was checked by 6,800 out of 8,000 who replied. In the next question they were asked those issues they considered most important as a problem of national policy. "Maintaining peace" led the list. He also reports that "business," businessmen and farmers are especially critical of wasting money on foreigners. Yet we know of the great pressures being brought to bear to "use our God-given abundance to feed the poor and starving people in other lands."

Suggestions are frequently made that U. S. agricultural products can play an important role in the economic development of many of the "developing" countries. This may be possible. My own work leads me to believe that if properly conceived and carried out such a program might make a worthwhile contribution. However, it is important that we keep in mind the fact that such a program, to achieve success, must be designed with the main purpose in mind—i.e., economic development rather than surplus disposal. This in turn can be done only if you give your support to legislation that is designed to accomplish this broader objective. We must remember that individually and collectively we have an interest that goes beyond the immediate dollars-and-cents concern of a particular sale.

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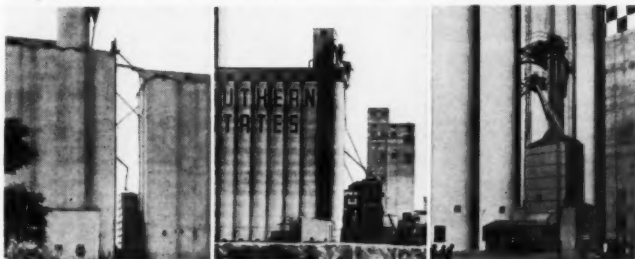
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The Foreign Agricultural Research Program Under Public Law 480

By G. E. HILBERT

Director, Foreign Research and Technical Programs Division, Agricultural Research Service, U. S. Department of Agriculture, Washington, D. C.



G. E. Hilbert

WITHIN the last year and a half, the U. S. Department of Agriculture has initiated a program of research in foreign countries on the development of new and extended uses for agricultural commodities, and has started a program in the areas of farm, forestry and marketing research. This broad program of agricultural and forestry research is authorized under Public Law 480. It is financed with foreign currencies received from the sale of surplus agricultural commodities abroad.

The most important criterion in the selection of projects to be financed with foreign currency is that they benefit American agriculture and forestry.

Any project acceptable to the foreign country can be expected to be mutually beneficial. Work will not be initiated on problems which would intensify competition on the international market for our agricultural products. No work will be done on problems that would be of value primarily to the foreign country and of little, or no, value to the United States.

The foreign utilization research program is being carried out under the authority provided by P. L. 480 section 104(a), a subsection which deals with market development. It is under the authority of this same subsection that the Soybean Council of America, under contract with Foreign Agricultural Service, is pursuing its program abroad on the development of markets for soybeans.

Funds for the utilization research program are allocated and apportioned by the Bureau of the Budget. The research can be carried out only in those countries in which the government possesses foreign currency resulting from the sale of surplus commodities.

At the present time, the Bureau of

the Budget has made available to the Department for utilization research foreign currency in the following countries: United Kingdom, France, Spain, Finland, Poland, Yugoslavia, Italy, Egypt, Turkey, Israel, Pakistan and India. This list of countries may be expanded in the future.

Funds allocated for this research during fiscal year 1959 amounted to the equivalent of about \$6.5 million; for fiscal year 1960 an addition of approximately \$12 million is expected.

New Authorization

After the program of utilization research had been started, Congress provided authority to pursue investigations in the broad area of agricultural and forestry research. This authorization was provided on June 30 of last year by amending P. L. 480. A new subsection (k) was added, authorizing the use of foreign currencies derived from the sale of surplus agricultural commodities, *to the extent appropriated by the Congress*, for the conduct of scientific activities abroad. The language "conduct of scientific activities" is so broad that research in any field of science may be carried out. A number of departments and agencies in the government are giving consideration to initiating foreign research programs in areas under their jurisdiction.

The funding of our two programs—that is, the utilization research program, and the farm, forestry and marketing research program—thus is different, funds for utilization research being provided by the Bureau of the Budget, and for the other areas of research, through appropriation by Congress. In the Supplemental Appropriation Act, 1959, ap-

proved on Aug. 27, 1959, \$3.9 million was earmarked for the conduct abroad of farm, forestry and marketing research by the Department of Agriculture. This program will be carried out in all those countries already mentioned in connection with the utilization research program except United Kingdom, Italy, and possibly France.

The research will be carried out in foreign scientific institutions. These institutions may be governmental or nongovernmental research organizations, and universities or colleges. It is conceivable that some of these investigations may be prosecuted in private organizations. We are interested in having the research activities conducted wherever the best job can be done. The program will include both basic and applied research, but the stress will be on fundamental studies because foreign scientists have made some of their most noteworthy contributions in that area. We expect to apply in our own laboratories basic new findings discovered abroad.

Both grants and contracts are used as instruments for activation and control of the foreign research projects. Grants are used particularly for fundamental and basic research, which by its nature is difficult and sometimes impossible to outline in precise contract specifications. Contracts are used for applied research in which the plan of work can be spelled out in detail.

Grants or contracts for research projects are fully financed and totally obligated when executed. This avoids initiating projects requiring the appropriation of additional funds for their completion.

The life of an agreement may extend up to 5 years. For example, during this fiscal year we are plan-

ning to execute grants and contracts on our farm, forestry and marketing program, the total cost of which will approach the \$3.9 million worth of foreign currencies available. Although it is difficult to forecast the average life of these agreements, a reasonable estimate is 4 years. Assuming an average life of 4 years, the annual cost of these grants and contracts, therefore, would be close to a million dollars.

Sufficient funds will be held in reserve to finance completely all the work that is planned during the full life of these agreements. Actual payments are made in foreign currencies in increments during the life of the agreement. Periodic reports are received and reviews made of work underway to determine whether satisfactory progress is being made.

Patents resulting from these research projects will be taken out in the United States and will be dedicated to the Secretary of Agriculture. They will be available on a royalty-free basis to American industry.

Results Available

The results of this foreign research program will be available to our agricultural workers and to our industry.

As the foreign research program cuts across the functions of the Forest Service, Agricultural Marketing Service, and a number of different groups in the Agricultural Research Service, a foreign research and technical programs division has been established in the Agricultural Research Service to coordinate the overall agricultural and forestry research programs being conducted under P. L. 480.

A policy and program development board, composed of representatives of the Agricultural Research Service, Forest Service, Agricultural Marketing Service, and the Foreign Agricultural Service, has been established to develop policy, and review and appraise the overall program. Specific research project proposals from foreign institutions are reviewed for benefits to the United States by members of the board, and appraised for technical adequacy by the research divisions of the Department concerned with the subject matter of each proposal. The Department's central project office is utilized also to achieve coordination and avoid duplication with research undertaken by the Department in the United States.

A small regional office has been established in Rome to negotiate

agreements and supervise administratively projects in Europe. This European regional office is a part of that of the agricultural attache at our embassy in Italy. The director of the office is Walter M. Scott; the assistant director, Alvin D. Ayers; and the administration officer, James D. Forbes. If the program expands in Asia and in South America, an additional office may be necessary in each of those areas.

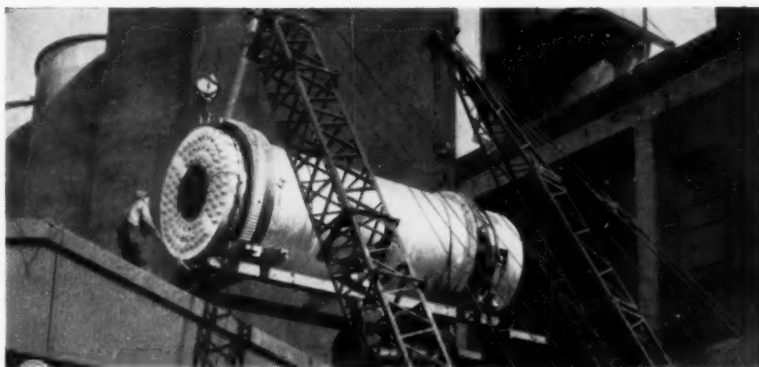
As the first step in the development of the foreign research program, surveys were made in some 20 countries in Europe, Asia, and South America to evaluate the potential of scientists and research facilities, and to determine the types of research which could be undertaken desirably. These surveys were conducted in cooperation with our embassies, in particular with the agricultural attaches. The proposed program was discussed and approved by the U. S. ambassadors or chiefs of missions in the foreign countries. During these surveys, discussions were held with foreign scientists to pinpoint research problems that would be of interest to American farmers, as well as to them.

Following these discussions, detailed research projects were prepared by the foreign scientists and

sent to and reviewed by our agricultural attaches. The projects are then reviewed and frequently modified in the Department. I should stress that ideas for new research projects can come from within the Department, from abroad, from our research and marketing advisory committees, from national commodity organizations, such as the Soybean Council of America, or from the processing industry.

When India was being surveyed Martin Weiss, of this Department, and I were fortunate to be there at the same time that Howard Roach, Ersel Walley and George Strayer were conducting market promotion activities on soybeans in that country. This afforded us the opportunity to exchange views and ideas on the kind of soybean research that can be done abroad and the institutions best suited for this type of activity.

To date, over 700 research projects under sections 104 (a) and (k) have been received from scientists in 17 countries. More are being received constantly. The estimated cost of implementing all of these proposals would approximate \$50 million. It is obvious that there is no dearth of ideas and that extensive screening is necessary to fit the proposals to



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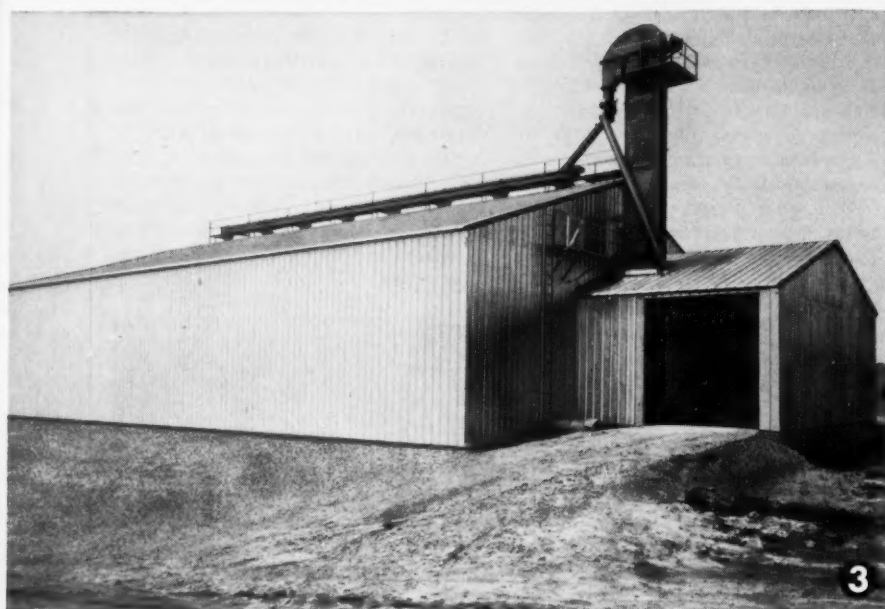
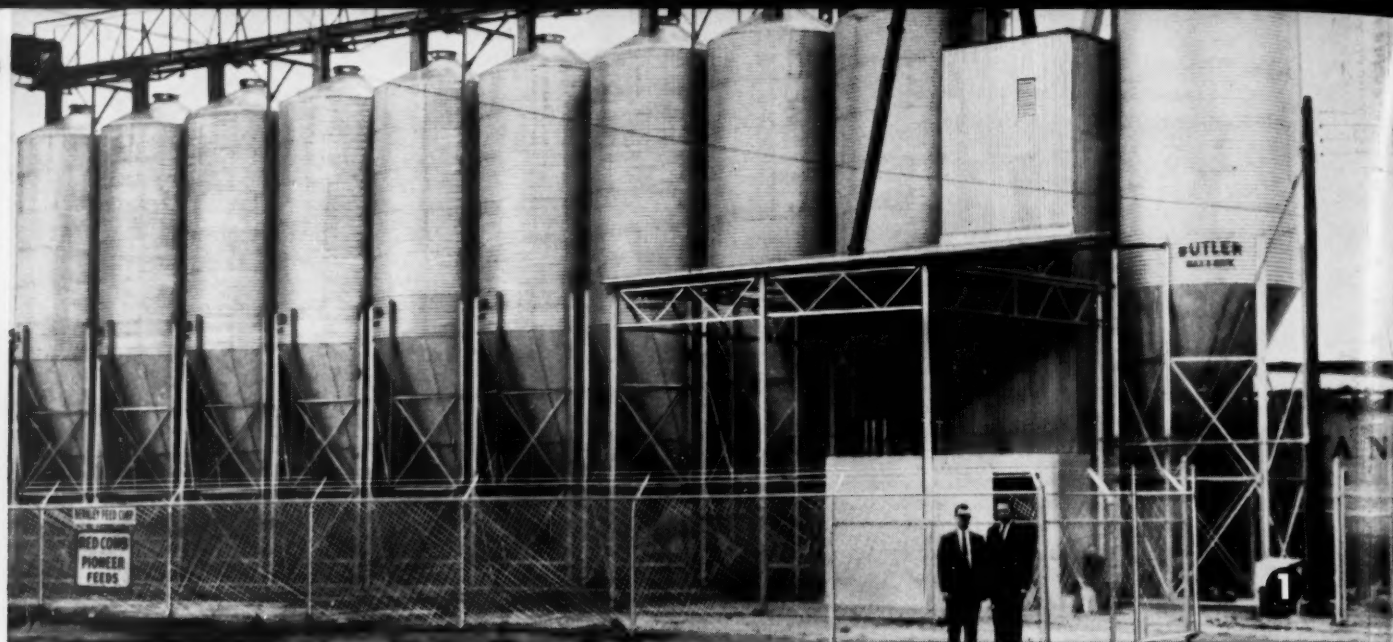
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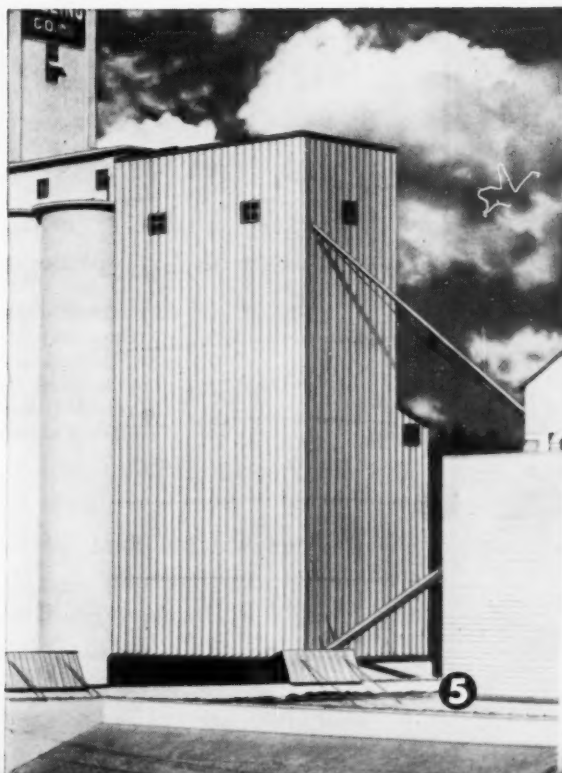
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the funds available to carry out the research. During the next several months our attention will be devoted primarily to the negotiation and execution of grants and contracts.

Now I would like to give you a picture of the kind of research program which will be carried on in foreign countries. First, I will discuss the areas of farm, forestry, and marketing research. Then I will describe specific projects on the utilization of soybeans being negotiated at the present time.

Although funds were appropriated by Congress a year ago for the farm, forestry and marketing research program, foreign currency actually was not made available to the Department until the latter part of this May. Since then we have negotiated three forestry research projects in Finland. Also, at the present time, we are negotiating an agreement in Turkey in the field of plant exploration.

Studies will be made on some species of nematodes, certain plant virus strains, and certain races of rust, as a hedge against future outbreaks of these pests in the United States.

Certain insects which attack weeds will be studied in the hope of finding some species that might be used safely in the United States to control undesirable plants. In the same manner, foreign insect pests, likely to gain a foothold in the United States as fast travel among nations continues to increase, will be studied in their natural habitats to learn possible ways of controlling them.

The marketing research program will provide a chance to learn more about the objective evaluation of commodity quality, as well as about improving the maintenance of stored commodities. Such knowledge would apply to agricultural products both in the United States and abroad.

Scientists will seek new knowledge of the biochemical changes that take place in the maturing of commodities, and study the basic biochemistry and physiology of fruits, vegetables, soybeans and cereals. They will aim to establish methods of measuring quality in mature fruits and vegetables. They will study the development of market diseases peculiar to given countries and work out methods for their control. They will observe insects found in marketing channels (such as the khapra beetle) in their natural habitat and plan methods of fighting them.

Because of a year's head start, much more progress has been made in establishing our program on utilization research. At the present time 20 grants have been executed in the United Kingdom, Finland, Israel, Italy and Spain. These grants concern research on the development of new and extended uses for cereals, cotton, wool, dairy products, meat, oils and fats and fruits and vegetables.

The one executed grant in which you will be directly interested covers fundamental research on the reaction between sugar and constituents of fats and oils, such as linoleic acid in soybean oil. The objective of this

work is to prepare a wide variety of compounds from sugar and components of oils and fats, and to obtain definitive information on the surface activity of such compounds. The products are expected to have surface-active properties that render them potentially useful as detergents, foam breakers, emulsifiers and the like.

The market for surface-active agents is very large and is increasing each year. Derivatives of oils and fats have been used as surface-active agents in the past but have been meeting increasing competition from synthetics. One way to meet this competition and to share in the expanding market is to improve the surface-active characteristics of oils and fats. This is the purpose of this project. The work under this grant is being done at the Tropical Products Institute, London, England. This grant has a life of 5 years and the overall cost is 32,750 pounds (about \$92,000).

Spanish Projects

In addition to those executed, we are now negotiating grants and contracts on 25 utilization research projects in European countries.

Several of these deal with soybeans. In Spain, an agreement to conduct investigations on improving the flavor stability of soybean oil is being negotiated with the Institute of Fats and Fat Derivatives located in Seville. This organization is the largest and most important oil and fat research laboratory in Spain. The research that will be carried out there will deal with studies on ion exchange procedures for removing from soybean oil trace metals which accelerate flavor instability. Many foreign countries importing soybean oil do not permit the addition of citric acid or other metal inactivators. They would, however, permit the removal of deleterious trace metals by a process of ion exchange. A process for increasing stability such as that envisaged under this project, if successful, would increase the applicability and marketability of soybean oil in edible channels both in this country and in foreign countries.

Spain is a large importer of soybean oil. Its industry has had little previous experience in handling and using soybean oil. The experience thus gained by the Seville laboratory on the properties of soybean oil and on its flavor stability should be very helpful to the Spanish oil processing industry, and in maintaining our markets in Spain.

Another project to be initiated in-

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volves the investigation of continuous multi-stage countercurrent crystallization of soybean and linseed fatty acids as a practical method for producing pure unsaturated fatty acids, to provide a basis for new or improved uses for them. Of importance to the utilization of soybean and linseed oils, both for industrial and food use, is the development of practicable processes for the production of pure unsaturated fatty acids from the oils.

A potential market exists for linoleic and linolenic acids in the manufacture of drying vehicles and finishes, plastics, elastomers, and plasticizers and in other new chemical applications. Also, elucidation of the role of fats in nutrition is dependent on availability of the pure fatty acid components of the triglycerides of fats.

The purpose of this project is to obtain fundamental information needed in the development of new and economical processes for the preparation of pure unsaturated fatty acids. A grant on this project is being negotiated with the University of Helsinki in Finland.

One of the best known oil and fat research centers in Europe is the Research Institute for Oils and Fats

in Paris, France. An agreement is being negotiated with this organization to conduct investigations on the preparation and properties of alkyl aryl ketone derivatives of vegetable oils and animal fats to provide information of potential value in increasing utilization of these commodities in such industrial products as surface-active agents, lubricants, and fungicides.

One of the approaches to developing new industrial uses for oils and fats is the preparation of novel compounds, particularly those compounds that might have potential application in expanding industrial fields, and determination of their chemical and physical properties. Among such compounds having promise are the alkyl aryl ketones, which can be prepared from hydrogenated soybean oil.

Development of new uses for soybean and linseed oils through investigation of their organometallic derivatives as components of protective coatings is a project on which a grant is being negotiated with the Research Association of British Paint, Colour, and Varnish Manufacturers, Paint Research Station, in Middlesex, England. Large outlets for soybean and linseed oils have

been in the protective coating field. These outlets, however, have been threatened by continuing and increasing competition from synthetics.

Previous work in this field suggests that substantially improved protective coatings can be developed through the use of organometallic compounds. Adequate basic information, however, is needed on the role of various metals in affecting the properties of protective coatings, and on the relationship of organometallic compounds to reactions between pigments and vehicles and between paints and metal surfaces to which they are applied. This investigation is designed to supply this needed information. It will permit evaluation of organometallic compounds, such as those of aluminum, titanium, zirconium, silicon, chromium, and barium, as additives to improve soybean and linseed oil paints.

Two grants, involving investigations on soybean and linseed oils, are being negotiated with the Experiment Station for the Fats and Oils Industry of the Italian Ministry of Industry and Commerce. This station is located in Milan. One of these grants involves investigations on the controlled thermal polymerization of

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soybean and linseed oils. This includes the isolation and characterization of the products formed at the various stages of polymerization. This type of fundamental information is needed to gain a better understanding of the changes that take place in soybean and linseed oils when they are used in protective coatings. This information should be helpful in making improvements to increase their efficiency in paints.

The other grant deals with investigations of the effect of metallic catalysts and physical conditions on oxidative cleavage products produced in the oxidation of the polyunsaturated

fatty acids of soybean and linseed oils. This kind of reaction will lead to the formation of relatively simple molecules such as aldehydes, alcohols and acids for which there are markets in the chemical industry. The main purpose of these studies is to produce an economical and practical method for producing them from soybean and linseed oils.

One other grant is being negotiated at this time in Italy. This is with the National Institute of Nutrition in Rome and covers research on the use of soybean protein products as supplements to wheat flour in the production of pasta, such as spag-

hetti and macaroni. Many countries, including Italy, depend to a large extent on cereal grains as the main staple of the diet. Raising the protein level and quality of the diet could be done readily in Italy by raising the protein and lysine content of such popular products as spaghetti and macaroni through the addition of soy protein products.

The National Institute of Nutrition has a large pilot plant and a great deal of experience on experimentation on spaghetti. It is well qualified to carry on these investigations on the quantity of soy protein products which can be added to wheat flour without changing the flavor and quality of pasta.

We expect all of these grants, now being negotiated, to be executed with the next few weeks.

In addition to the agreements being negotiated at the present time, several other research projects on soybeans are being developed and considered for investigation in England, France, Spain, Italy and India. These projects deal with the development of new types of chemical reactions and products from soybean oil; the elucidation of more fundamental information on the properties of soybean oil; and the development of more knowledge on the composition and unknown values of soybeans.

Recently completed was the review and approval of a large number of research projects for the foreign research program. To speed up our program, a team of scientists and administrative officers will assist the European Regional Office this fall on the negotiation of grants and contracts in Europe. Another team will do the same job in Asia. Our objective is to execute 100 grants and contracts before the end of this calendar year.

The initiation of this new research program, which is being financed with foreign currencies accruing from the sale of surplus agricultural commodities, for the first time provides the Department of Agriculture with an effective tool to tap and use to full mutual advantage the agricultural knowledge, agricultural experience, and agricultural resources of a large number of foreign countries. With all its possibilities of useful discoveries, the new program promises rich benefits—not only to farmers both here and overseas, but to all those interested in agricultural trade. Eventually those benefits will be shared, also, by the consumer public in the United States and abroad.

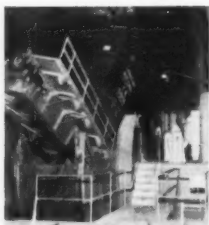


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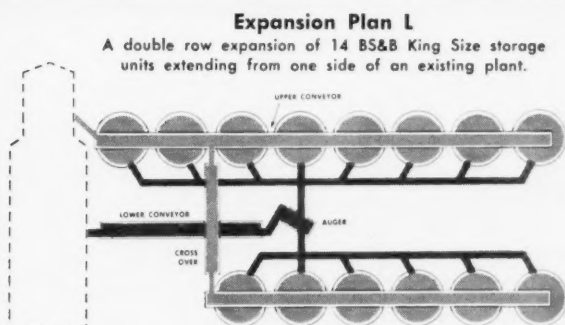
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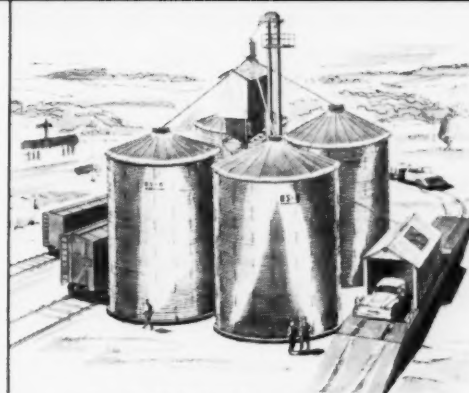


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L-1	28' 163'	18'	24'	75,446										96	119	
			32'	99,190										148	392	
			40'	122,948										238	345	
L-2	45' 189'	21'	24'	103,782										112	140	
			32'	136,164										202	312	
			40'	168,546										300	387	
L-3	51' 213'	24'	24'	136,754										132	175	
			32'	179,032										252	309	
			40'	221,310										356	310	
L-4	57' 237'	27'	24'	175,032										141	312	
			32'	226,632										294	364	
			40'	278,232										392	406	
L-5	75' 309'	36'	24'	230,132										287	406	
			32'	413,336										562	546	
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Soybean Breeding Research— Progress and Problems

By **HERBERT W. JOHNSON**

Research Agronomist, Crops Research Division
Agricultural Research Service, U. S.
Department of Agriculture, Beltsville, Md.



H. W. Johnson

THE COOPERATIVE soybean research program deals with genetics and breeding, diseases, physiology, and various cultural practices. The research is a cooperative endeavor of state agricultural experiment stations and the U. S. Department of Agriculture. I shall restrict my remarks to breeding activities, with major emphasis on breeding for disease resistance.

Six new varieties have been released in the cooperative breeding program since soybean varieties were last discussed on your convention program in 1957. This makes a total of 22 field and 2 vegetable varieties released in the cooperative program since its beginning in 1936. Sixteen of the field varieties were listed by Mr. Cartter in the September 1956 issue of the Soybean Digest and the additional six are listed in order of maturity in the table.

The year of release for the various varieties given in the table indicates the year in which the name and publicity for the variety were first released. It will be at least 1 year and in most cases 2 years after release before seed supplies of the varieties will be sufficient for wide-scale production.

VARIETIES RELEASED FROM THE COOPERATIVE BREEDING PROGRAM IN 1958 AND 1959

Variety	Parentage	Year of release
Lindarin	Mandarin (Ottawa) x Lincoln	1958
Ford	Lincoln x (Lincoln x Richland)	1958
Shelby	Lincoln x (Lincoln x Richland)	1958
Scott	D49-2525 (S100 x CNS) x L6-5679 (Lincoln x Richland)	1958
Hill	D632-15 (Haberlandt x Dunfield) x D49-2525	1959
Hood	Roanoke x N45-745 (Ogden x CNS)	1958

Lindarin is about equal in maturity to Harosoy and will com-

pete primarily with Harosoy and Hawkeye and to a less extent with Blackhawk. It was released in Indiana and South Dakota and should be well suited to the northern third of Indiana, Illinois, and Ohio. It is somewhat less susceptible to Phytophthora rot than Harosoy, has equal resistance to downy mildew and frog-eye, and has relatively low susceptibility to stem canker.

Ford is a day or two earlier and produces higher yields than Lincoln. It will be particularly competitive with Lincoln and Adams and to a less extent with Hawkeye and Clark. It was released in Iowa, Nebraska, and South Dakota.

Shelby is about equal to Lincoln in maturity and produces higher yields. It should be particularly competitive with Adams and Lincoln and to a less extent with Hawkeye and Clark. It was released in Indiana, Illinois, and Missouri and is adapted to the central two-thirds of Indiana and Illinois and the northern part of Missouri.

Scott is similar to Perry in maturity and was released for production in southern Missouri. It is resistant to bacterial pustule and wildfire and yields more and has better seed quality than Perry. It is not as widely adapted as some of the other varieties but should contribute materially to soybean production in southern Missouri.

Hill is about the same maturity as Dorman and was released in Delaware, Maryland, Virginia, North Carolina, Missouri, Arkansas, Mississippi, Texas, and New Mexico. It has the same type of multiple disease resistance as Lee and considerable resistance to field populations of root-knot nematodes. The variety yields more than Dorman and is more resistant to lodging. It is expected to take over most of the Dorman acreage and to replace Ogden and Lee on much of the acreage in Delaware and Maryland.

Hood is about 2 days earlier than

Ogden and was released in Maryland, Virginia, North Carolina, Kentucky, Missouri, Arkansas, and Oklahoma. It is resistant to the same leaf diseases as Lee. In comparison with Ogden, it has yellow seed higher in quality, produces slightly higher yields, and is more resistant to shattering. It should replace Ogden on essentially all the acreage presently devoted to Ogden and may replace some Lee acreage in the more northern areas.

It is interesting to note that Ford and Shelby, as well as Clark, Chippewa and Renville, all came from the cross of Lincoln x (Lincoln x Richland). This has been an extremely productive cross and Clark and Chippewa have proved to be outstanding varieties. It is expected that both Ford and Shelby will become equally popular.

It should be noted that Ford and Shelby, which are similar in all respects, are recommended for two distinctly different areas. Actually, as far as the maturity of the two varieties is concerned, the areas of adaption overlap to a considerable extent. One might raise the question then as to why both varieties were released. The answer is simple. Ford is a little better than Shelby in the northern area of adaption and Shelby is a little better than Ford in the southern area. Although the differences are relatively small, they amount to a tremendous number of bushels when multiplied by the number of acres on which these varieties will eventually be planted. The experiment stations participating in the release of these two varieties took these things into account and concluded that both varieties should be released.

Two varieties in addition to those developed in the cooperative program have been released in the past 2 years. One of these, *Bienville* from the cross Pelican No. 2 x Ogden, was released by the Louisiana Agricultural Experiment Station. It is

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at St. Louis**

In the near future soybean growers will have a new type of variety

slightly later than Jackson and is expected to replace much of the Jackson acreage in Louisiana.

Merit is an early Canadian variety licensed in March 1959. It was developed by the forage crops division, Central Experimental Farm, Ottawa, from the cross Blackhawk x Capital. It was about 3 days earlier than Grant and a day or two later than Norchief in the uniform tests in 1958 and appears to have considerable promise in the northern portions of the United States.

There are additional new varieties on the horizon but just when these will be released we are not prepared to say.

Research Developments—In 1957, I discussed two important disease research problems with you, and today I should like to give you some recent developments in connection with these problems.

The first of these, *Phytophthora* rot of soybeans, is proving to be a widespread problem and has been found in the Southern States as well as in the North Central States. Good progress in developing varieties resistant to this disease has been made. The mode of inheritance of resistance has been studied and reported and the information has been used in the development of resistant varieties. The Ohio Agricultural Experiment Station has under consideration the release of three selections resistant to the disease. Another approach has been to transfer resistance, through backcrossing, to varieties currently in production.

This work is moving along, as in the transfer of resistance to other diseases, and in the relatively near future soybean growers in this country will be confronted with a new type of soybean variety. This new type variety will be one with which they are familiar but which has been changed by the addition of genes that condition resistance to various diseases. In the absence of the diseases the two varieties will be indistinguishable, but in the presence of the diseases one will perform satisfactorily whereas the other may be a complete failure.

The second problem in which there have been important developments is the soybean cyst nematode. We have learned a lot about the nematode during the past 2 years and its distribution has been studied by surveys conducted by other organizations. We have discovered how to

reduce the damage resulting from the nematode by some rather simple rotations and by the use of nitrogen fertilizers. These findings are important in dealing with the nematode, but even more important in defeating the nematode is the progress that has been made in finding resistance to it and in finding out how to use this resistance in the development of resistant varieties.

Resistance to the nematode has been found only in agronomically undesirable types, which means that to be useful to growers it must be transferred to better types. The inheritance of this resistance is complex in comparison with that of most other diseases with which we deal. This makes the task of developing resistant varieties difficult and time consuming.

Nevertheless, we are making good progress and, as with *Phytophthora* rot, our first approach is to transfer this resistance to varieties that have already proved to be well suited to the areas where the nematode exists. This is by far the fastest and surest procedure and will, in the foreseeable future, give rise to varieties indistinguishable from Lee and others except in the presence of the nematode.

Research Problems—Many problems in various phases of soybean production need continued and increased attention. Each time a serious disease develops for the first time it becomes a permanent problem in our breeding programs. Although we may quickly find resistance to the disease, the use of this resistance in the breeding program is an expensive operation. In some cases, the disease has never been a problem in a given area but breeding for resistance to the disease must be a permanent objective in our research program.

For example, most of the varieties used in the Mississippi Delta are resistant or tolerant to *Phytophthora* rot. The disease has not been a production problem in the area except to a few growers who have used susceptible varieties. The experiences of these growers and with susceptible strains in our breeding program clearly indicate that all new varieties released for the Delta in the future must be resistant to *Phytophthora* rot. Thus, we have a time-consuming research problem with a disease that most growers in the area do not know exists.

There are a number of diseases that have not yielded to our research efforts as readily as *Phytophthora* rot or the soybean cyst nematode. These include bacterial blight, stem canker, and brown stem rot. For the last two diseases we have not found complete resistance. Differences in susceptibility do exist but these are extremely difficult to transfer from one variety to another.

The most disturbing and unpredictable disease of the past 3 years is bud blight, a disease caused by a virus. In 1956 and 1957, the disease was found in areas where it had not previously been reported and was particularly damaging in some areas of Illinois and Indiana. The incidence of the disease during these 2 years seemed to indicate that it demanded immediate and drastic attention. Our research activity with the disease was increased accordingly and we have found out some interesting things about the virus.

The extensive experiments put out in 1958, however, yielded essentially no results simply because the disease was either completely absent or present in only small amounts. The almost complete absence of the disease is reminiscent of a few years back when a similar situation occurred. We have planned our program for this year on the assumption that bud blight will again be prevalent, and with the idea of trying to find out just exactly why it is prevalent in one year and almost completely absent in another. This is indeed a research problem in which nature has the upper hand, and for which there is obviously no simple solution.

The six new varieties since our last report on your convention program in 1957 represent what we consider substantial progress. Progress is also being made in breeding for disease resistance and other characteristics. We are currently devoting substantial effort to breeding for high protein and are making progress commensurate with the effort devoted to the task.

Soybean breeding is a long-term process and activities started today will not yield useful returns to growers until several years later. The direction in which our breeding efforts should be channeled is therefore a continuing problem, and we make a conscientious effort to devote our time and facilities to activities from which maximum returns can be expected.

Beginning with Soybeans

Mr. Hodgson has been superintendent of the Waseca Station since 1919

By R. E. HODGSON

Superintendent, Southern Branch Experiment Station
University of Minnesota, Institute of Agriculture

IN 1919 SOYBEANS were strangers to Minnesota farmers. The late Dr. A. C. Arny, agronomist for the University Department of Agriculture, was intrigued by the possibilities of this crop, new to the North Star State. Arny had planted beans for several years at University Farm, St. Paul, and made a number of selections from mixed populations. One of these selections was named Habaro, Minnesota 109.

When one of his former students became superintendent of the Southern Branch Station of the University at Waseca, about 80 miles south of St. Paul, Arny made a good sales talk, promoting variety testing. There were at least two questions to be answered:

1—What were the agronomic qualifications of this crop, and

2—If they would grow, how could they be used?

Both answers are obvious today, but there has been enough trial and error in between to make the early exploration interesting.

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Some 2 bushels of Habaro beans were available. At Arny's suggestion, Kate and Charlie were hitched to the corn planter and the seed spread over 3 acres in rows spaced 42 inches. They were cultivated along with the corn and cut with a mower. A small threshing machine was available and by changing pulleys the cylinder was slowed to 450 RPM. The threshing was satisfactory, but hand feeding that tangled mass of stems and pods was a nightmare. The variety test was seeded by opening furrows and scattering weighed packets of seed by hand.

There were 14 varieties tested in 1923. All of these are now obsolete, but the names may bring back memories to some of the old timers. Habaro had top rating, followed by:

Minsoy
Chestnut
Manchu
Elfon
Black Eyebrow
Early Brown
Ito San

Wisconsin Black
Mandarin
Soysoya
Wea
Pimpu
Medium Yellow

All were measured for seed and hay yield.

Learning to grow soybeans was an interesting experience. Row width was varied from 6 inches to 30 inches by using appropriate openings in an ordinary grain drill. Special plates were devised for the corn planter when cultivation was to be done with single row corn plows. A sugar beet cultivator could be set for rows 24 up to 30 inches. Mules proved better than horses on the narrow rows. Their feet were smaller. Elaborate tests were run to determine the optimum spacing in rows of varying width. Seeds per row and plants per row were counted, resulting in many sore backs and knees.

Beans were sometimes planted in pot holes where the horses went hock deep in mud. There were occasions when drouth limited the yield of grain and corn. Under both extremes, soybeans seemed less affected than other crops. Beans did surprisingly well in what the farm-

ers called "alkali spots." These were generally rings around the border of pot holes where evaporation had left salt deposits which limited the growth of corn.

Weeds and beans were poor companion crops. Seeding in 6-inch rows like grain was the easiest way to plant, but the resulting crop was usually half weeds. It was discovered that soybeans would stand a lot of rough treatment after the cotyledons were absorbed and on a hot afternoon when wilted, it was possible to cultivate by pulling over the field a rotary hoe with a harrow tied behind it. There was little lasting injury to the beans. In tests, this outfit was run twice over the field at right angles, with small damage to the stand. The rotary hoe required more speed than horses could provide. A truck was used at speeds up to 15 miles per hour until the radiator boiled over. This rough treatment killed some weeds if they were not too big.

So the first question was answered. Soybeans would grow very well in southern Minnesota. They would yield around 20 bushel per acre of seed or 2 tons of palatable hay. They left the ground mellow—too much so for side hill erosion. They were a dependable crop, would endure extremes of moisture, could be planted after the corn was in and harvested before the corn was ready, thus distributing the labor load. If planted in rows and kept clean, they offered a good opportunity to kill weeds.

Soybeans could be grown, but what use could be made of them? The most obvious use was as a hay crop. The following is a quotation from the Minnesota Farmer's Institute Annual of 1922:

"When the roads are muddy and oil meal \$60 per ton, the farmer living 8 or 10 miles from town is apt to feed less protein concentrate than

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SOYBEAN DIGEST

is required for a balanced ration. If he could only grow his protein concentrate at home, he could feed a balanced ration, save the hauling and a large part of the price of oil meal. Soybeans are a protein concentrate which may be grown at home. At the same time, they will leave the soil cleaner and richer in nitrogen for having grown them. . . . Soybean hay will be one of the important forage crops of Minnesota."

Soybean hay could be cut with a mower and cured in cocks with excellent results, but it was a lot of work. In windows, the stems were slow to dry. One solution was to cut and tie with a binder, setting the bundles on end in small shocks to dry. This made fine hay, better than clover. Alfalfa in this locality was only grown experimentally at this time.

There should be some use found for the ripe beans. They could be threshed when tied in bundles, loading the wagons in early morning when dew made the pods tough. Sheep thrived on soybean straw with a little corn silage and what was too coarse for sheep, the horses would clean up.

The straw found an outlet, but feeding the ripe beans was more of a problem. Steers on a full feed of corn liked the beans, but the ration seemed too high in oil. They often went off feed, and gains were not improved. Ripe beans in the bundle were fed to dairy cows with excellent results. Fed whole after threshing, there was considerable loss in the manure. Fed in the bundle, they were thoroughly chewed.

Beans and corn in alternate rows were tried for hogging off. Hogs liked the taste of soybeans, but the packers complained of soft pork. Mature beans in the bundle did show promise for brood sows, but changing machinery, the use of alfalfa and finally a market for crushing, made the bean picture change in a hurry.

Looking back, some of the early experiences with beans seem rather futile. Who could then know that they would ever achieve their present importance? It was not only necessary to learn how to grow them. The early experiments with crushing and using the oil and meal would make a story equally interesting. The cultural adventures in southern Minnesota were only a tiny part of the whole picture. Even the most optimistic enthusiasts of 40 years ago did not visualize sending soybeans by the shipload back to the countries which gave us this marvelous crop.

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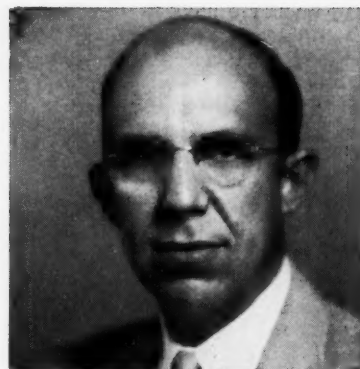
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Current Status of the Soybean Cyst Nematode

The nematode has been found in seven states
but not yet in a major producing area

By JOSEPH F. SPEARS

Plant Pest Control Division
Agricultural Research Service
U. S. Department of Agriculture



Joseph F. Spears

OVER 23 million acres were planted to soybeans this season. Already, surveys have revealed that more than 29,000 acres are infested with the soybean cyst nematode. That is nearly 11,000 acres more than showed infestation by the end of June a year ago. This points to real trouble at harvest-time this year for some soybean farmers.

In late May and early June reports began coming into Washington of field damage to soybeans. The percent of damage reported has varied widely. In some fields only small spots appeared. In others, as much as 90% of the field showed effects of the nematode. In many cases, where there was widespread damage to the crop, growers have plowed under the beans and replanted the fields to a substitute crop. In one state, 2,000 acres were treated as a total loss, and plowed under.

A local official wrote that in one

county of his state at least 90 fields were showing symptoms of nematode damage. In another section, a county agent estimated in mid-June that if existing conditions continued, the 2,500 acres of soybeans showing visible damage in his county would yield only half a crop.

Another county agent estimated damage in his county at \$360,000 for this year as a result of the nematode. This estimate was arrived at by figuring a 20% loss of the crop at \$2 a bushel. Economic damage in that state is reported much more widespread and much more severe than in any previous year with this pest.

In the Castle Hayne area of North Carolina, the first area to report soybean damage in this country, soybean acreage has been drastically reduced from 1,200 acres to now less than 100. In some infested fields yield was reduced from a normal 23 bushels to the acre to 4 bushels.

Surveys have been made in more than half of the United States—27 of the 31 soybean-producing states. To date, infestations have been discovered in seven. However, the nematode has not been found within a major soybean producing area.

Three Areas Infested

This pest infests three specific areas. One is in the Mississippi Valley, and includes parts of Arkansas, Missouri, Kentucky, Tennessee, and Mississippi. Another is along the east coast of North Carolina where the nematode was first found in this country 5 years ago. The third consists of several northeastern North Carolina counties and an adjacent southeastern Virginia county.

The surveys are made by field teams which sample-check fields in soybean areas. This summer, in some states, preliminary surveys for symptoms are being made from the air. These are followed by ground surveys when indications of damage are spotted. Ground crews go into the soybean fields, sample soils, and examine roots of off-color plants for nematodes. They seek especially to find the outer limits of the soybean cyst nematode infestation.

Altogether, more than 2 million acres have been surveyed since 1954. About half of these—more than a million acres—were checked in the past fiscal year. Of the total land surveyed, more than 1% has been found infested. The greatest nematode damage, percentagewise, is in Tennessee, where about 3% of the total soybean crop acreage is infested.

Here is a brief summary of the situation in the seven states in which infestations of the nematode have been found:

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STATUS AS OF JUNE 30, 1959
(cumulative since 1954)

	No. of count- ties	No. of prop- erties	Total acres	Date first iden- tified
N. C. ...	7	151	3,475	Aug. 1954
Tenn. ...	7	152	8,350	Nov. 1956
Mo.	4	163	5,663	Dec. 1956
Ark.	2	186	7,431	Feb. 1957
Ky.	1	10	968	May 1957
Miss. ...	1	1	300	July 1957
Va.	1	52	3,098.5	Sept. 1958
Totals 23	715	29,285.5		

Since these figures were compiled, however, two additional counties, one in Arkansas and one in Tennessee, have reported discovery of this pest. They bring the total number of counties to 25. Revised figures on properties and acres infested are not yet available.

The heavy buildup this year has led many to ask what triggered the damage on such a wide area in the already infested states. In order to answer this it is necessary to explain something about the nature of this almost microscopic parasite.

The first aboveground evidence of the soybean cyst nematode in a field is the presence of small spots of poor growth. These usually show up about 35 days after planting. The plants in these more-or-less circular spots are usually stunted, off color, and present a generally unthrifty appearance. These symptoms alone, however, cannot be relied on for positive identification of the disease. Aboveground symptoms appear only if large numbers of nematodes are present in the soil.

The nematode can be present without visible evidence aboveground. Roots of what appear to be lush-growing soybean plants may be supporting a nematode population that will attack next year's crop—if soybeans are continued without proper rotation.

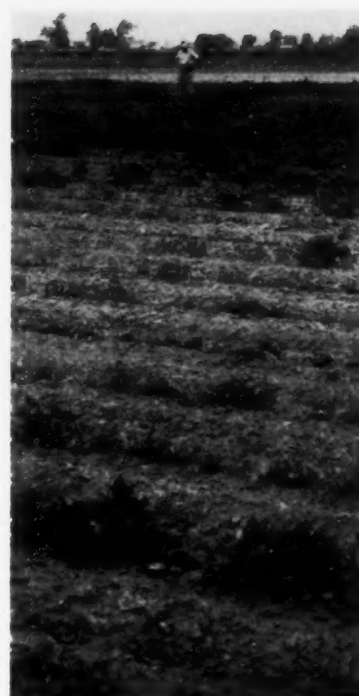
On the other hand, parts of fields that show heavy damage this year

may be supporting only a relatively small number of nematodes. Heavy attack by nematodes and early damage reduces the root system so that the nematode population buildup is limited by available food for the larvae. Nematodes build up rapidly on healthy, vigorous root systems but more slowly on the poor root systems found on plants attacked severely early in the season.

The first invasion of the nematode is always on young roots and is always damaging. Just how much damage nematodes feeding on the roots do to plant growth and yields depends on many things—when and how many nematodes initially attack the plant, how fertile the soil is, and how much water is available.

Lack of water may account for the early appearance this spring of nematode damage in the Mississippi Valley, since there was a general shortage of moisture early in the growing season. Plants with root systems that are not too severely damaged can get along all right, providing other growth factors are favorable. Low soil temperatures keep nematodes inactive, so some crops get off to a good start before the nematode feeding begins. Less nematode damage might follow a cold, wet spring than a warm one.

While a cold soil discourages nematode activity, the cold itself seems to have little or no permanent effect on the larvae in their cysts. Cysts exposed to temperatures as low as 40 degrees below zero (F.) for as long as 7 months still contained viable eggs. In one province in Japan, where the soybean cyst nematode infestation is more severe, the ground is frozen from November to April. Judging from experience with the closely related sugar beet nematode, it seems probable that some larvae in cysts may remain viable for several years. This biological



NEMATODE caused serious damage to this crop of soybeans. Damage started to show about 40 days after planting.

trait makes both discovery and control more difficult.

The first important steps in control have been taken—recognition of the pest and surveys to determine the extent of the infestation. State and federal quarantines have been put into effect in six of the infested states. A public hearing was held July 8, 1959, at Richmond, Va., for the purpose of determining if the state of Virginia should be placed under quarantine. It is expected that the quarantine in this state will become effective later this summer.

The purpose of federal quarantines is to prevent long-distance spread of the nematode from the known infested localities. State regulations

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STUNTED and killed soybean plants are examined by W. F. James, Pemiscot County, Mo., agent, and Minori Ichinohe, nematologist of the Japanese Institute of Agricultural Sciences.

parallel the federal. Quarantine regulations are based on practical considerations. They permit processors and other handlers of beans to conform with the regulations without undue interference in their operations.

When an infestation is discovered, the entire state may be quarantined, but the regulations apply only to designated areas. As the infestation spreads, revisions are made to extend the area covered by regulations. Growers, processing plants, storage plants, shippers, common carriers,

and other firms or individuals are required to abide by the regulations.

The regulations recognize that the principal means of transmitting soybean cyst nematodes, including cysts, is in soil or on articles or products contaminated with soil. This includes such operations as movement of soil in connection with highway construction; movement of plants, either balled or with soil attached; and, of course, movement of soybeans contaminated with soil.

Soybeans and small grains for seed must be certified to be free of contamination before they can be moved from an infested area. Other restrictions are provided for the protection of the industry. Regulations also apply to commercial soybeans moving to processing plants from infested areas. In infested areas where cotton is also produced, handling of the cotton, and of the trash and burs after ginning, must be supervised to prevent the spread of the nematode. Similar procedures apply to peanuts.

Farm Equipment

For farm tools, implements, and harvesting equipment, as well as construction and maintenance equipment, certain cleaning methods are prescribed. For movement of any of these items over long distances or interstate, strict adherence to these regulations is required. Requirements governing local movement of farm equipment, particularly along the fringe of the regulated area, recognize practical considerations.

This is a point of essential interest

in which the American Soybean Association can be most helpful. Some soybean growers, whose infested fields show no apparent damage, tend to discount the nematode's potential destructiveness. As growers realize the danger of spreading the nematode and refuse to have uncleaned equipment brought on their farms, they will be effective in halting this parasite. And as owners insist that equipment be cleaned before it is moved from an infested to an uninfested property, they, too, will help in containing this pest within existing limits.

This kind of participation in active local control can be hastened through education. The American Soybean Association has been carrying this message, and, I hope, will continue to spread the word as effectively in the future as in the past. You have a wide audience of people who are economically concerned.

Now then, what can best be done to attack the pest directly?

To free the soil of nematodes is the ideal goal, but it is a difficult and longtime undertaking. There are three possible courses—crop rotation, the use of chemicals, and use of nematode resistant varieties.

A first step is to keep the nematode from increasing its spread in fields where it already exists. On the basis of present knowledge, this can best be accomplished by planting crops that are not susceptible. The soybean cyst nematode cannot feed or reproduce except on a suitable host plant, such as soybeans, snapbeans, lespedeza, white lupine, and the weeds, hemp sesbania and henbit deadnettle.

Without a host plant, the larvae in the soil eventually die of starvation or are destroyed by other parasites, diseases or other biological factors.

After the land is planted to non-host crops, the nematode will decrease in numbers. The rate of decrease depends on local conditions. We still do not know exactly what these conditions may be. But enough information is available to indicate that crops on which the nematode can build up should be kept off infested land for at least 3 years, and possibly as long as 5. On the other hand, continuing to grow soybeans on infested fields enables the nematode to build up to a point where eventually soybeans can no longer be grown profitably.

In experiments in Tennessee, where soybeans followed soybeans, yields averaged 22 bushels per acre. Where soybeans followed cotton,

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milo or fallow, yields averaged 32 bushels per acre.

In practice, the control of nematodes by rotations is hampered by the difficulty of keeping fields entirely free of host plants. These may include weeds as well as volunteer plants of the susceptible crop. Although some larvae in cysts may remain viable for several years, a major portion of the population will disappear in a year or two.

Rotation Advisable

Soybean growers who have fields that are not known to be infested, but who grow soybeans continuously without rotation, would do well to inaugurate a rotation system. This precautionary measure might well prevent them from having to deal with the pest directly on properties that have so far escaped infestation.

Chemicals such as methyl bromide, ethylene dibromide, the D-D mixtures, and nemagon or fumazone, can effectively reduce the soybean cyst nematode by as much as 90% to 95%. But while they can contribute to limiting the nematode, they have not achieved complete control in early field experiments. For that matter, other nematodes have not been com-

pletely controlled by chemical means, either. At present, the chemicals available are too expensive to be practical for use in the production of soybeans. Also, they are effective for only 1 year.

Plant breeders are working on plants with resistance as another means of controlling this nematode. Experiments have indicated that resistance already exists in some commercial soybean varieties, particularly Illsoy and Peking. Progress is being made in incorporating resistance in other breeding lines.

During the latter part of June of this year, I had the pleasure of traveling with Minoru Ichinohe, nematologist of the Japanese National Institute of Agricultural Sciences in Tokyo. Dr. Ichinohe has been in this country under a Rockefeller Foundation grant since September 1958, and will return to Japan this week.

Dr. Ichinohe visited soybean areas in Arkansas, Missouri, North Carolina, and Tennessee. He rated the damage to beans that he observed here as typical of conditions in Japan—except that in Japan the beans showed more yellow in their leaves.

As for extent of damage, Dr. Ichinohe says that in Japan, when the

crops are not rotated, it is not unusual for infested fields to yield fewer seeds than were planted for the crop.

The rotation system is the only measure that has proved practical and economical for control of the nematode in Japan. His experience has shown that a 3- or 4-year rotation results in some improvement. But to get good yields he recommends a 5- or 6-year rotation.

For growers in this country, with present knowledge, the most effective weapons, then, are good farming practices: crop rotation, use of good seed, inoculation, and following recommended planting dates—not too early and not too late.

For the future, we can look to research to give us new knowledge of the pest and of the plant. We need to know more about the soils and their relationship to susceptibility, more about the effects of moisture and temperature, and the possible use of fertilizers to lessen or offset damage.

The soybean cyst nematode is an alarming threat. It can be overcome. But it will take the combined efforts of local, state and federal research and regulatory workers, and of producers, handlers and processors.

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Research on the Increasing Use of U. S. Soybeans in Japan

By **ALLAN K. SMITH**

Northern Regional Research Laboratory,
Peoria, Ill.*



A. K. Smith

IN 1956 THE American Soybean Association in collaboration with the Foreign Agricultural Service of the U. S. Department of Agriculture started a market development program on soybeans in Japan. As the program progressed, certain technical problems were encountered that were related to the use of U. S. soybeans particularly for making Japan's traditional foods. In 1957 USDA's Agricultural Research Service became associated with the project to give technical assistance in evaluating and overcoming the problems raised by some of the Japanese processors.

Many of our problems in Japan arise because their traditional uses are far different from any uses in this country. The traditional foods of Japan are processed from whole beans, whereas in this country the

* This is a laboratory of the Northern Utilization Research and Development Division, Agricultural Research Service, U. S. Department of Agriculture.

use of whole beans until recently has received no commercial recognition for food, feed, or industrial application. Also the traditional food processors of Japan value the protein more highly than the oil which is the reverse of the emphasis in this country.

Although high prices for soybean oil have influenced our plant breeding program toward the development of high oil varieties, it is important to point out that in the United States we are in a period of changing values and that the dollar value of the oil in our soybeans is now less than the value of the protein. If this trend continues, and there are reasons to believe it will, then protein for domestic utilization will increase in value in contrast to the oil and the type of soybeans needed for our domestic uses will more nearly approach that of the Japanese.

Study in Japan

Late in 1957, I spent 2 months in Japan studying the products and processes where U. S. soybeans are competing with Japanese and communist Chinese beans. The results of this investigation were published as ARS-71-12 under the title of, "Use of United States Soybeans in Japan."

The problems raised by the Japanese are briefly summarized as follows:

1—Composition: It was generally stated that Japanese soybeans are higher in protein than our soybeans.

2—U. S. soybeans are slower to absorb water than Japanese beans and absorb water unevenly.

3—Our soybeans cook unevenly and consequently they may not support uniform fermentation.

4—Products from U. S. soybeans are darker in color than those made from Japanese soybeans.

5—Food products from U. S. beans do not have as good a flavor as from Japanese soybeans.

6—The Japanese do not like the amount of foreign matter, split and broken beans, and other crop material in U. S. soybeans.

The criticisms made by the traditional food processor are their qualitative observations rather than measured differences. I have generalized their comments which do not apply equally to all their products nor are they of equal significance for any single product. It is important also to distinguish between the use of U. S. soybeans by the Japanese oil mill processor and the traditional food processor. For the former, item 6 is the most significant.

Subsequent to my investigation in Japan, a research project was initiated at the Northern Laboratory to make a more exact evaluation of the Japanese criticisms of our soybeans and to devise a means of making our soybeans meet their requirements. The immediate objectives of our project are:

1—To investigate the reported differences between U. S. and Japanese soybeans and to evaluate their significance.

2—To compare approximately 30 U. S. and 6 Japanese soybean varieties in miso and tofu, two most important Japanese foods, and to determine which U. S. varieties are suitable for making these foods.

3—To study the processing methods used by the Japanese and to modify their processes for better adaption of our soybeans to their use.

The ARS-71-12 report describes tofu, miso, and the way they are made.

An extensive study of U. S. soybean varieties was included in the project with the expectation that we

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might find several U. S. varieties suitable to the Japanese for making miso and tofu. If we found such varieties, we could export beans "identity preserved" to meet the requirements. Already shipments of several soybean varieties to Japan have been made in bags identity preserved by interested exporters for trial tests by miso, tofu and natto processors. These beans were exceptionally clean and free of split and broken beans. It is anticipated that eventually the results obtained by Japanese processors will be correlated with our own laboratory studies.

Results of variety studies also will be made available to the U. S. soybean plant breeder and will serve as a guide in selecting soybean varieties for future release. It is not expected the plant breeders will breed specifically for export markets, but in selecting new varieties properties important for export can be considered along with those important to the domestic market.

Japanese Scientists

Two Japanese scientists, Tokuji Watanabe and Kazuo Shibasaki, accepted invitations to come to the Northern Laboratory to work on these projects. These men were selected because of their excellent scientific training and because of their experience and knowledge of tofu and miso.

Dr. Shibasaki is a fermentologist from Tohoku University at Sendai, and his work on miso at Peoria has been under the supervision of Dr Clifford W. Hesseltine of our Fermentation Laboratory. Mr Watanabe is from the Food Research Institute in Tokyo and has been associated with me in our work on tofu.

The research project as outlined is a large one and could not be

covered in the 9 months that Dr Shibasaki and Mr. Watanabe were at our Laboratory, but we have made progress on all the six problems listed. A pilot plant for making tofu was assembled and single batches of 15 U. S. and six Japanese varieties were compared in making tofu. The 15 represent less than half the major U. S. varieties, and we have found two, Jackson and Lee, that make tofu very similar to that from the Japanese soybeans. Other promising varieties are Blackhawk, Comet, Dorman, Ottawa, Mandarin, and Acme and undoubtedly further suitable varieties will be found as the work continues. In miso studies we have found a modification of the traditional process which indicates the U. S. soybeans can be used satisfactorily to make a high quality product. However, commercial tests of these small-scale operations will be necessary for final confirmation of their acceptability by the Japanese.

Composition

It was reported, and generally assumed as true, that Japanese soybeans were higher in protein and lower in oil than U. S. soybeans. We have accumulated data (all on a moisture-free basis) to determine whether this report is true. Tables 1 and 2 show the protein and oil content for soybeans obtained from Japan and various parts of the United States for our research on miso and tofu. The data on U. S. beans are for selected varieties grown in a limited area. Although we do not know the history of the Japanese beans, we do know that the name indicates the area in Japan where they are grown. Table 3 shows the protein, oil, and weight of 100 grams of seed for 33 recommended U. S. varieties. These 33 varieties cover essentially all the soybean-growing areas in the United States.

Groups OO to IV inclusive are grown in the North Central States, approximately north of Cairo, Ill., to northern Minnesota; groups V to VIII inclusive are south of Cairo. Table 3 was taken from the Results of the Cooperative Uniform Soybean Tests, 1958, Part I, North Central States, and Part II, Southern States, 1958, reported in Urbana, Ill., March 1959 by the crops research division, U. S. Department of Agriculture, in cooperation with state agricultural experiment stations.

The Urbana data are for composited samples from seven or more locations for each variety and represent average values for the location in which each variety is best adapted. The average protein values for the 11 Japanese beans, Table 1,

TABLE 1—PROTEIN AND OIL CONTENT OF JAPANESE SOYBEANS MOISTURE-FREE BASIS

Variety	1957		1958	
	Protein %	Oil %	Protein %	Oil %
Aomori .....	.....	.....	40.7	16.9
Hokkaido Akita	39.7	16.1	41.3	17.4
Kumamoto .....	.....	.....	46.5	15.7
Miyagi	39.0	17.6	40.8	16.8
Nagano	39.4	19.6	42.2	17.4
Hagi-Dani	44.2	17.0	.....	.....
HoKuo	41.4	17.6	.....	.....
White Hilum Iwate	39.5	15.4	.....	.....
Average	40.5	17.2	42.3	16.8

TABLE 2—PROTEIN AND OIL CONTENT OF U. S. SOYBEANS USED IN RESEARCH ON TOFU AND MISO. MOISTURE-FREE BASIS

Variety	1956		1957		1958	
	Protein %	Oil %	Protein %	Oil %	Protein %	Oil %
Acme .....	.....	.....	.....	.....	34.7	21.0
Adams	39.0	.....	.....	.....	42.3	19.9
Blackhawk	42.5	.....	.....	.....	38.9	19.6
Chippewa .....	.....	42.0	.....	.....	43.2	20.3
Clark .....	.....	39.2	.....	.....	42.4	20.6
Comet-1 .....	.....	.....	.....	.....	39.9	17.9
Comet-2 .....	.....	.....	.....	.....	39.1	19.3
Dorman .....	.....	.....	.....	.....	42.3	21.2
Dortchsoy .....	.....	.....	.....	.....	38.2	22.1
Harosoy	41.7	.....	40.2	21.1	43.2	19.9
Hawkeye	42.0	.....	40.2	.....	43.2	18.9
Jackson .....	.....	38.6	21.9	.....	42.0	20.5
Lee	44.0	43.8	20.5
Lincoln	40.6	42.9	19.5
Norchief	33.7	21.2
Average	41.8	40.1	21.5	40.7	20.2

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TABLE 3—PROTEIN, OIL, AND WEIGHT IN GRAMS OF 100 SEEDS. DATA ON MOISTURE-FREE BASIS ARE FROM COMPOSITS OF SEVEN OR MORE LOCATIONS, 1958 CROP

Variety	Group*	Protein	Oil	Seed weight grams
Acme.....	OO	40.7	18.4	15.9
Crest.....	OO	41.8	18.2	18.3
Flambeau.....	OO	42.0	17.2	14.7
Capital.....	O	40.1	18.8	12.2
Comet.....	O	39.6	18.6	16.2
Grant.....	O	40.1	19.0	15.8
Mandarin.....	O	42.0	18.5	18.6
Narchief.....	O	40.8	19.1	15.7
Blackhawk.....	I	41.6	20.0	16.3
Chippewa.....	I	42.2	20.1	14.8
Adams.....	II	40.2	20.9	15.0
Harosoy.....	II	41.1	20.8	17.8
Hawkeye.....	II	41.4	20.8	17.9
Lindarin.....	II	41.2	21.0	15.8
Ford.....	III	41.4	21.2	16.8
Lincoln.....	III	41.0	21.5	14.8
Shelby.....	III	41.0	21.4	16.3
Clark.....	IV	42.2	22.5	16.4
Perry.....	IV	42.7	22.4	16.4
Scott.....	IV	38.3	21.0	14.5
Wabash.....	IV	40.6	21.7	14.3
Dorman.....	V	40.2	21.1	13.2
Dortchsoy.....	V	39.4	21.5	11.6
S-100.....	V	42.2	19.0	13.3
Hood.....	VI	39.7	22.0	15.4
Ogden.....	VI	41.0	21.1	16.2
CNS-4.....	VII	44.8	18.4	13.0
Jackson.....	VII	39.4	22.3	15.6
Lee.....	VII	41.8	21.6	14.2
Bienville.....	VIII	41.9	21.5	15.5
Improved Pelican.....	VIII	41.3	20.7	12.3
J.E.W. 45.....	VIII	41.7	20.4	18.3
Yelanda.....	VIII	45.6	20.0	17.9
Average.....		41.2	20.7	

* Group numbers indicate strains adapted to similar length of day and other location conditions. This table was compiled from Results of Cooperative Uniform Soybean Tests 1958. Part I North Central States and Part II Southern States, March 1959. Crops Research Division, USDA, Urbana, Ill., in cooperation with the State Agricultural Experiment Station.

TABLE 4—PROTEIN, OIL, SEED WEIGHT, AND HILUM COLOR OF GARDEN-TYPE SOYBEANS. DRY BASIS*

Variety	Protein N X 6.25 %	Oil %	Wt. 100 seeds grams	Hilum color
Bansei.....	36.4	21.6	21.2	Colorless to brown
Easycook.....	40.95	17.5	16.2	Dark brown
Emperor.....	42.2	19.9	29.7	Colorless to light brown
Fuji.....	39.6	21.4	25.9	Black
Funk Delicious.....	42.3	20.0	31.7	Light brown
Giant Green.....	39.3	22.4	29.4	Black
Higan.....	41.0	18.1	23.4	Brown
Hokkaido.....	40.4	20.8	31.9	Colorless to light brown
Illington.....	42.9	18.6	25.9	Colorless
Imperial.....	41.0	20.5	28.4	Colorless to light brown
Jogun.....	40.7	19.9	29.9	Colorless
Kanrich.....	41.1	19.0	27.3	Colorless
Kim.....	40.4	19.9	28.7	Black
Willomi.....	42.3	19.4	31.1	Light brown to brown
Average.....	40.7	19.9		

* Except for Kanrich, Kim, and Easycook, supplied by Dr. C. R. Weber, Iowa State College of Agriculture and Mechanic Arts, data are from University of Illinois Bulletin 453, Edible Soybeans, by J. W. Lloyd and W. L. Burlison, 1939.

and for the U. S. beans, Tables 2 and 3 are 41.3%, 40.8%, and 41.2%, respectively. Although the data for Japanese soybeans are more limited than for U.S. soybeans, one concludes from the average values so far collected that U. S. and Japanese soybeans have essentially the same amount of protein.

However, further analysis of data leads me to believe that comparing these average protein values of the two countries does not give an entirely correct picture of what happens in the marketing of soybeans. When we market soybeans, here or abroad, any one carlot or shipload of soybeans does not represent the average for the whole country. More likely it represents a limited growing area and its protein value may vary from the average. A comparison of the protein values for individual varieties grown at various locations in the United States will illustrate the possible variations which may

have more significance than a comparison of average values in the marketing of soybeans.

Although the analytical data for all the individual samples of the Urbana Laboratory were not immediately available, we were able to inspect a large number from their 1958 results. To extend these data, we inspected earlier reports on protein values published by the Urbana Laboratory in Technical Bulletin No. 787, 1942. This bulletin reports results for 10 varieties of soybeans grown at 5 locations for the years 1936-40 inclusive.

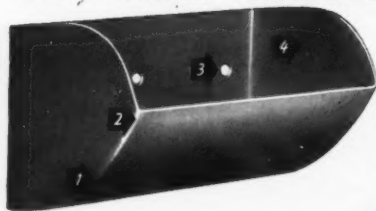
Incidentally, the average protein value for the composited samples for 1936 is 44.4%, and for the 1937-40 inclusive is 42.5. Both are considerably higher than the 41.2% average for the 1958 data in Table 3. For the individual samples inspected there is a much wider difference in protein values than shown by the averages.

High and low protein values for U. S. and Japanese soybeans are tabulated as follows:

Origin	Year	High Protein %	Low Protein %	Difference %
U. S.	1936-40	53.2	36.4	16.8
U. S.	1958	49.0	31.6	17.4
Japanese	1957-58	46.5	39.0	7.5

A broader sampling of the Japanese beans would be expected to show a somewhat wider variation. If we compare the 1938 high of 53.2% and 1958 low of 31.6% for U. S. soybeans, the difference is 21.6%. From the wide variations resulting from variety, location, and year grown or a combination of the three, it becomes apparent that it is easy to obtain samples or even large batches of soybeans from the two countries having substantially different protein values and batches for either country may be higher than from the other. Thus comparing random batches of soybeans of the two coun-

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tries could lead to opposing conclusions.

From the present analysis it would be my conclusion that reasonable variation in the protein content of different batches of U. S. soybeans must be expected. However, it would appear from available data that over an extended period the average protein values for U. S. soybeans would not vary significantly from those for Japanese beans.

If in the future vegetable protein should substantially increase in value in comparison with the oil, then it may be expected that a premium will be paid for soybean protein in a manner presently existing for wheat protein.

We have not obtained sufficient data on the oil content of Japanese soybeans to make a satisfactory comparison, but data that are available show U. S. field-type soybeans average about 3.7% higher in oil than Japanese soybeans.

In connection with the export of soybeans for food uses it is pertinent to discuss briefly the garden or vegetable type of soybeans. There have been inquiries and even attempts by some Japanese processors to import these beans.

U. S. Vegetable Soybeans

There is no clear definition for distinguishing the field-type from the garden-type beans. The distinctive features of the garden beans are in their superiority in flavor, texture, and ease of cooking—properties that make them preferred for food use. It is anticipated that the garden-type beans would satisfy the requirements of the processors of Japanese traditional foods if they were available in the required amounts. Most of our so-called vegetable-type soybeans we are growing in this country are Japanese garden varieties that came directly from that country; the Kim and Kanrich were developed in this country. Serious disadvantages of the garden-type beans which restrict production are the tendency to shatter from the pods when ripe and the consequently large loss with mechanical harvesting. Another deterring factor is that yields of some varieties are lower than for field beans.

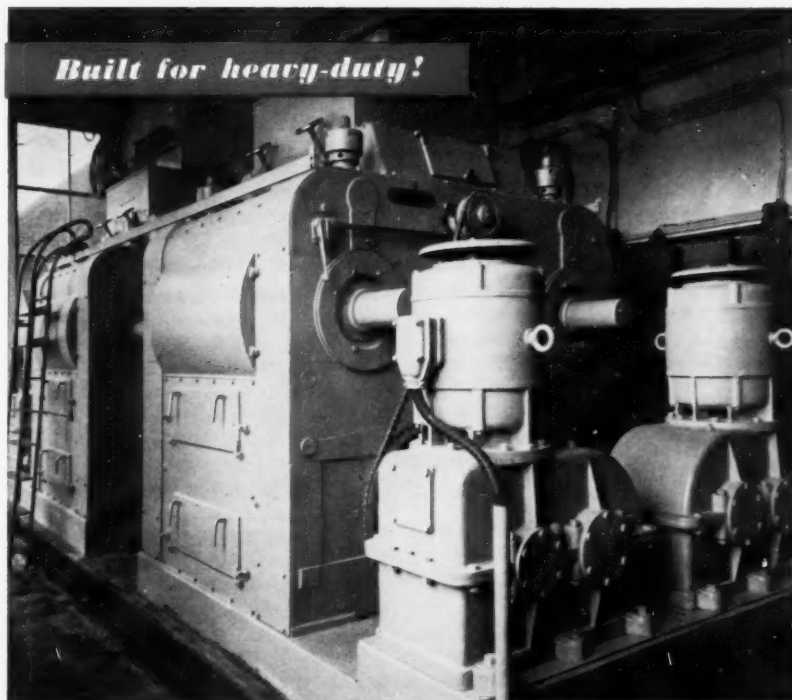
It has been stated frequently that the garden-type bean is higher in protein and lower in oil than the field-type. Table 4 shows the protein, oil, weight of 100 seeds in grams and hilum color for 14 varieties. The source of data for all the varieties

except Kanrich, Kim, and Easycook, is the University of Illinois Bulletin 453 by J. W. Lloyd and W. L. Burlison, 1939. For these data the protein values are no higher than for present-day field types, and the oil values are only 0.77% lower than shown in Table 3. More data on vegetable-type beans are desirable before arriving at a satisfactory conclusion, but it appears that claims for high protein values for garden-type soybeans may be exaggerated.

Soybean varieties presently produced in the United States are those

that best meet our present needs. However, we can look forward to further modifications in our soybeans by the plant breeders to meet any changes in our requirements.

We have hopes that the work on improving use of U. S. soybeans for Japan will be continued and extended in both the United States and Japan and that further progress will be made in using our soybeans for Japanese food. We are preparing detailed reports of the work thus far accomplished on tofu and miso for publication in technical journals.



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Japanese Scientists Look at U. S. Soybeans

Most difficulties of U. S. soybeans in Japan arise from a difference in usage in the two countries, and from our harvesting methods

By TOKUJI WATANABE and
KAZUO SHIBASAKI¹



Tokuji Watanabe

WE ARE VERY glad to have this opportunity to speak to you about the use of U. S. soybeans for food uses in Japan. We are members of the Japanese government food research organization and at home we work for the soybean food industry. We are glad to cooperate with the U. S. Department of Agriculture and the American Soybean Association in improving the use of your beans for Japan. Japan imports large quantities of soybeans as they are a very important source of protein and oil for our people.

Soybeans in Japan

It is indeed reasonable that the Japanese government should plan to increase the available protein by

about 1 million metric tons in the next 10 years for the purpose of increasing the protein in the diet of its people. The significance of soybeans in the Japanese diet is indicated in that this plan shall include a 40% increase in daily consumption of soybeans.

It is well known that the soybean is very rich in oil and protein, but it is not easy to digest after normal cooking because of its hard cell wall structure. Cooking, roasting, or grinding does not overcome this difficulty satisfactorily. However, the Japanese traditional soybean foods, some of which were adopted from China in ancient time, are easily digested. The hard texture of soybeans is partially digested by enzymes produced by microorganisms as in the fermentation of miso, natto, and shoyu. In making tofu and frozen tofu the indigestible seedcoat and cell walls are removed during processing. The beany flavors are completely removed in these products. Japanese people get 10% to 15% of their daily protein from soybean foods. They have a long-time custom of using these foods with cooked rice. These foods are not only nutritious, but are also

very suitable for use with cooked rice. As long as Japan uses rice as a staple food, she will need these traditional soybean foods as supplements. The recent consumption of soybeans in Japan is about 1.3 to 1.4 million metric tons per year. Over half of this amount is used in traditional foods. Miso, tofu, and shoyu each consume in the range of 250,000 to 300,000 metric tons (9 to 11 million bushels) of soybeans a year. Although the consumption of these foods per capita has not yet recovered to the levels before War II, total consumption has increased in recent years. It is true that Japan wants more soybeans.

U. S. Soybeans for Japan

Now we know that the total amount of soybeans exported to Japan from your country last year is about 670,000 metric tons (25 million bushels) which is the largest to date. This amount is much more than the total produced in our country. This might have been caused partially by stopping of trade between Japan and China but also by increasing demand for soybeans in our country. A. K. Smith of the Northern Regional Laboratory, who

¹Food Research Institute, Department of Agriculture and Forestry, Tokyo; and Tohoku University, Sendai, Japan. Collaborators sponsored by Foreign Agricultural Service and Agricultural Research Service of the U. S. Department of Agriculture and American Soybean Association who have worked at Northern Utilization Research and Development Division, Peoria, Ill., since October 1958. Japanese-American Soybean Institute furnished sample of Japanese products needed for this work.

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Kozuo Shibasaki

conducted an investigation in Japan in 1957, has already reported that U. S. soybeans are used in Japan mainly for oil extractions and not for food. One reason is the attitude of Japanese food processors toward U. S. soybeans. What we can say about U. S. soybeans exported to Japan is perhaps repetition of the remarks by Dr. Smith. Because the discontent by the processors has an important bearing on their use of your soybeans, we cannot emphasize the point too much.

Japanese Soybean Foods

Before we speak about U. S. soybeans, we believe it may be more useful to outline for you the processing of whole soybeans by the two most important Japanese soybean food products, miso and tofu. Miso is the fermented product made from cooked whole beans and rice which has been inoculated with *Aspergillus oryzae*. The soaked soybeans are cooked for 1 to 2 hours to make them reasonably soft and then mixed with molded rice, salt, and water.

Resulting mixtures are packed in wooden or cement vessels for fermentation. The product is light, medium, or sometimes deep brown in color and is used in about 10 times its weight of water to flavor and improve the nutritional value of soup.

We believe you understand that soybeans for making miso must have certain requirements, for instance, they should be free of foreign matter, contain few cracked beans, be even in size and light in color, absorb water uniformly, and soften easily on cooking.

Tofu, which is another important soybean food product, is made from soybean milk by precipitating the

protein and oil with a calcium salt. Soaked soybeans are crushed by grinding, are cooked, and then filtered to give soybean milk. A calcium-sulfate suspension is added to the milk to coagulate the protein. Coagulated curd is molded in wooden boxes to make a rectangular cake of soft white tofu.

Soybeans for tofu also have certain requirements, which include absence of foreign matter and cracked beans, evenness of size, uniform water absorption, high protein solubility, and in the final product good texture, and a light color.

Problem for Japanese Foods

Now we wish to speak of the principal complaints made by Japanese food processors about U. S. soybeans. These are foreign matter, cracked beans, difficulty in absorption of water and cooking, difference of flavor, and color of final products.

We have found while in this country that the foreign matter in U. S. soybeans, which may be much more than for those raised in Japan, results from your large-scale farming and system of mechanical harvesting. This is the greatest problem in Japan for the food processors. The fact that we use soybeans for food rather than animal feed is enough to explain this problem.

Many Japanese food processors are accustomed to using only clean domestic soybeans. If they use U. S. soybeans, they must purchase new expensive cleaning equipment, otherwise they remove foreign matter by

ineffective hand picking. All miso and tofu makers want to use clean U. S. beans.

Whether the U. S. beans might be cleaned before or after shipping must be determined from economical and technical studies. However, it is true if U. S. beans are to be used for Japanese foods, they must be much cleaner than they are now before they can be used.

When we visited the public grain elevator in New Orleans 2 months ago, we found that new and effective cleaning equipment had been installed. We believe this new equipment will make a valuable contribution to the exporting of clean soybeans to Japan.

We think also improvement of weed control in the fields may be another effective way to encourage the use of U. S. soybeans for foods in our country. Morning glory and jimson weed seeds mixed in with U. S. soybeans must all be completely removed.

The cracked beans, which are also undesirable because of their too rapid rate of water absorption and easier spoilage, are caused mainly by handling, particularly in bulk transportation when their moisture is low. The transportation of bagged beans to Japan is now being tried. This method of shipment, if successful, will supply clean whole beans for our use.

The difficulty in water absorption and cooking of U. S. soybeans was explained to Dr. Smith by many Japanese miso makers when he vis-

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ited Japan. Some hard beans which do not absorb water in the period allowed for soaking were found in some varieties. U. S. beans cooked under the same conditions as Japanese beans are usually harder. This is not desirable for miso, although hardness is different among batches of beans. To make U. S. beans as soft as Japanese beans, longer cooking is necessary, but this causes darkening of the color which is not desirable for making light colored miso.

One solution to the problem of using U. S. beans for Japanese foods may be to select varieties from which good products can be made. We can suggest some possibility for tofu from our laboratory experiments conducted in Peoria. We would obtain fewer cracked beans, more even size, and even quality from the bagged beans of selected varieties. These beans would be appreciated by Japanese food processors.

Some trials on modifying the usual processing of the Japanese foods are being investigated to overcome the trouble of U. S. beans mentioned above and some of them are very promising. We have succeeded in making good miso from U. S. beans by a new process. We hope commercial trials also will be successful.

During our visit in the United States we were able to observe the many varieties of soybeans, their planting, growing, harvesting, handling, storing, and transporting. We are very glad to have had this opportunity to speak to you of some of the problems of using U. S. soybeans for Japanese foods. We believe some of the difficulties can be solved fairly soon by mutual understanding, and cooperation and the others by promoting further scientific research. We are preparing our experimental results for publication soon in technical journals.

Dr. Shibasaki and I wish to express our thanks to the American Soybean Association for their financial assistance, to the U. S. Department of Agriculture for inviting us to the Northern Regional Laboratory, to A. K. Smith and C. W. Hesseltine of the Northern Regional Laboratory for guiding our research, and to V. H. Hougen of Foreign Agricultural Service, W. D. Maclay and J. C. Cowan of Agricultural Research Service, S. Hayashi of the Japanese American Soybean Institute, and Dr. Y. Sakurai of the Food Research Institute of Japan, who helped and encouraged us in promoting our program.



By **JOHN E. BLIGH**
Anchorfield, Brookstead, Darling Downs,
Queensland, Australia

Soybean Growing in Australia

"ANCHORFIELD," my property, is at Brookstead on the Darling Downs in Queensland, Australia. I believe that a new crop for a limited area in Australian agriculture is soybeans. Although not far removed from the experimental stage, they have been grown by me quite successfully for the past 3 years.

With the advent of the modern drill-seeding machinery, Australia this year reached about 1,500 acres, production 25,000 bushels of soybeans.

In Australia, the market for soybeans is not supported but there is every prospect that in a few years they will be in more widespread cultivation, particularly on the Darling Downs in Queensland. This newly developing crop in Australia has many potential uses as in the United States.

The seed is planted from mid-November through the early summer months and it takes between 130 and 150 days to grow to maturity.

We find too that the plant is very sensitive to the number of hours of daylight, and that it should not be planted until there are at least 14½ hours of light between early dawn and twilight. Throughout the early growing life of soybeans, every effort must be made to keep out the weeds. The rows are from 7 to 14 inches apart. About 40 pounds of beans are planted per acre. This low seeding rate is chosen to suit our limited rainfall.

In Australia, the yields of soybeans have varied tremendously. From a harvest of almost nothing to yields as high as 31 bushels of beans to the acre have been obtained in small areas. The use of irrigation at strategic times in the growth cycle

can greatly increase the size of the harvest.

We have had some success growing soybeans and credit it to help received from top line scientists in the U.S.A. and my own country.

Our biggest problem after maturity is the shattering of the seeds. Most varieties we have shatter their seed very easily when they mature under field conditions. Everything is ready to start harvesting as soon as most of the leaves have dropped and the whole plant is fairly dry, and the seed has 13% moisture.

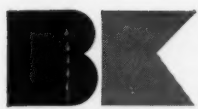
Complete mechanization has come into all phases of the harvest, and trucks are used to take the seed from the field direct to the silos, with no delay.

Soybeans are used in a great variety of ways in your country. They are used almost exclusively for full-fat flour in the manufacture of bread in Australia.

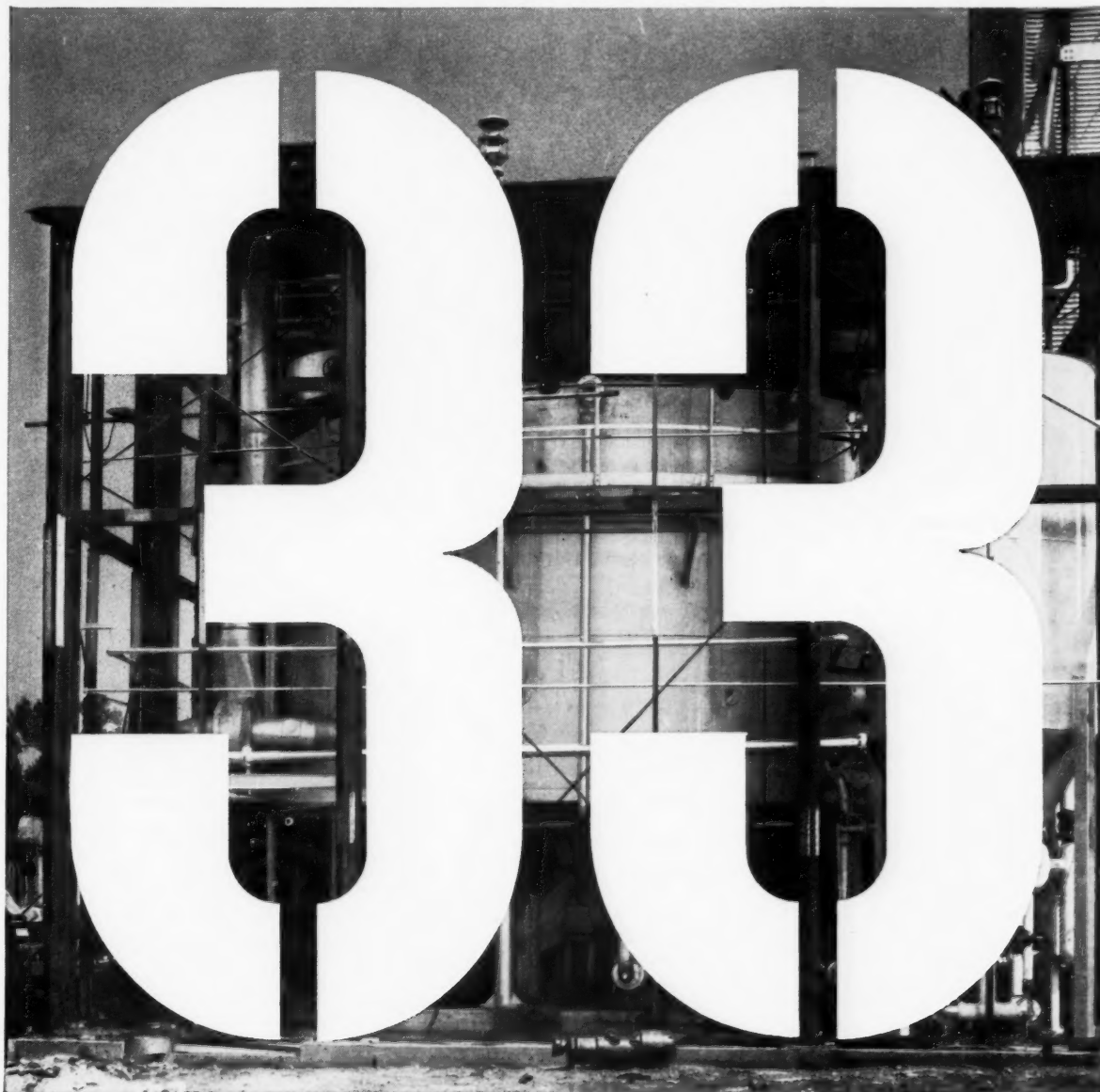
We obtain a fair yield from a very versatile and valuable plant. We have a long way to go to catch up with yields that you achieve in this country. Help from American soybean breeders would be very valuable.

The story of soybean growing in Australia is still in its infancy, but being one of the pioneers, I have felt it necessary to come from my property on the Darling Downs in Queensland to glean as much information as I can from you good people and I am certainly getting that help.

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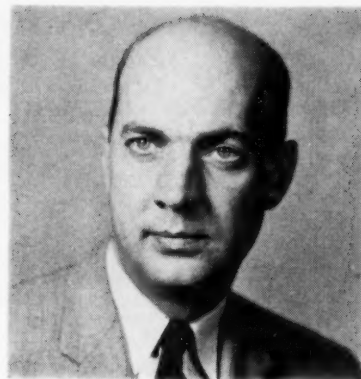
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What Price for 1959-Crop Soybeans?

Sees only a slim chance for a bull market

By **T. A. HIERONYMUS**
Associate Professor of Agricultural Marketing
University of Illinois



T. A. Hieronymus

AFTER 2 rather dismal years in which the price of soybeans was tied to the loan and to CCC resale policy, the game of trying to forecast what may happen in the soybean price picture is again interesting. Because of a lower acreage and lower support price, it rather looks as if the loan will not be a dominant price factor in the year ahead. It was in 1956 that I last appeared before this convention to look ahead at soybean prices. Because the past 2 years were so closely tied to the loan, I do not regret missing them except that they would have fattened my batting average.

The price of soybeans cannot be accurately predicted at this time of year. Supply is too uncertain. Final soybean yields are importantly affected by growing conditions during August and September. The average difference between the Aug. 1 prospective yield and the final yield was

1.636 bushels per acre for the 1948-58 crops. The extreme misses were 1953 when the yield declined by 2.3 bushels per acre and 1957 when it increased 3.3 bushels. Applied to this year's acreage the average change is 36 million bushels. A repetition of the 1953 decrease would result in a decrease of 51 million. An increase of the 1957 size would make a difference of 72 million. A specific price forecast at this time cannot be very meaningful.

At this time of the year, the best approach to the problem is to explore usage possibilities and then watch production develop.

Exports. The current crop year will establish a new record in the export of soybeans. The final total will be about 105 million bushels. Soybean exports have been increasing rapidly in recent years. The annual average increase has been 13 million bushels for the past 5 years.

While information about conditions in China is not complete or accurate, it appears that the soybean crop will be sharply reduced, thus reducing U. S. export competition.

Japanese imports from the United States have been increasing. With continued prosperity in Japan and an increasing population, an increase in the year ahead appears likely.

European crushing capacity is continuing to expand. They will buy all of the soybeans that their product markets allow. The livestock population of Europe is increasing which means that more meal will be required. The heavy livestock areas of Europe have had a severe drought this year. Again, more meal will be required. It will probably be imported as soybeans.

If the price of soybeans does not increase sharply from current levels an export total of 120 million bushels appears likely.

Meal. The demand for soybean meal has been expanding at a rate

of about 12% per year. This means that under constant conditions of meal and livestock prices and livestock numbers, 12% more meal will be taken each year. This increase in demand is the result of improved feeding practices and an increasing proportion of poultry and hogs in our total livestock population. When it becomes necessary to cut back on meal use below this annual expansion rate out of supply considerations, the price must be increased sharply to tailor demand to supply.

Conversely, when meal prices are held at relatively high levels to offset low oil prices and high soybean support prices, as they have been much of the time during the past 6 months, meal usage drops off sharply.

Soybean meal demand for poultry other than turkeys and broilers should increase 3% to 5%. Smaller numbers will be offset by more favorable feeding ratios. The increase is based on trend. As laying flocks are reduced in numbers and increased in size, feeding practices are improved.

Only a madman would suggest that broiler numbers will not be increased again. The increased soybean meal demand from this source has been amounting to about 7% per year.

The biggest source of increase in soybean meal demand in recent years has been for hog feeding. At constant prices and numbers of hogs, about 6% more meal is used per hog each year. The number of hogs will be substantially larger in the year ahead. The price of hogs will be lower. These are offsetting factors. The price of hogs appears to be more important in the demand for meal

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FORD, KANSAS

May 22, 1959

OWEN K. NUGENT, Gen. Mgr.
SUSIE TRACY, Asst. Gen. Mgr.

Mr. E. A. Anderson
635 W. 8th Street
Fremont, Nebraska

Dear Andy:

Early in 1958 the management of The Ford Cooperative Exchange, decided to purchase a grain dryer. Much time and consideration was spent studying grain dryer operations and many miles were covered in observing different makes of grain dryers. In all we visited with the owners of six different brands of grain dryers and studied the installation and operation of each carefully.

The Clipper Randolph was selected as having all the features we desired in a grain dryer and after one years operation we are certainly proud of our selection. The cost of operation is less than 2/10 cents per bushel. While the quality of the grain is not lowered in the least part, the grain grade is raised on every bushel.

Our Randolph has performed up to and in most cases exceeded its specifications in every phase of operation. We have found the Randolph to do everything your representative told us it would. Another feature of the Randolph we like very much is that no extra labor is required while operating it. Our regular elevator operator runs the dryer and the elevator at the same time without neglecting either operation.

With the outstanding success we have had with our present dryer, you may be assured our next grain dryer will be a Clipper Randolph.

Sincerely,

Owen K. Nugent
Owen K. Nugent
Manager

OKN/et

* Reports Owen K. Nugent, General Manager of the Ford Cooperative Exchange, on the outstanding success his group has enjoyed with its new Clipper-Randolph Grain Drier.



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for hogs than does the number of hogs. Unless the price of hogs gets quite low, say persistently under \$12, a 5% to 10% increase in meal demand appears likely.

These several considerations point to an increase in meal requirements of about 5%, possibly a little more. They indicate a crush of about 425 million bushels of soybeans. If supplies are not large enough to provide this increase the price of meal will have to go up to levels that will cut back meal use by hogs.

In the year ahead, the use of meal will be cut back by smaller price increases than it has during the past 2 years. The high prices of the spring and summer of 1958 and the substantial strength in meal prices during the current crop year were made possible by high hog prices. These high hog prices are a thing of the past. Feeders will react much more quickly to expensive meal and cheap corn than they have in the past 2 years.

I have put the prospective livestock numbers and prices and a meal supply from a 425-million-bushel crush into my forecasting formula and found a price of \$49.25 per ton Decatur for 44% protein meal. Two alternative computations were made on the basis of different levels of supplemental feeding of hogs. The first assumed a moderate reduction on the basis of reductions that have taken place in the recent past when hog prices declined sharply. The guide year in this case was 1955-56 when supplemental feeding declined 7% with the sharp reduction in hog numbers. The resultant soybean meal price was \$45.65. The third calculation assumed that the dramatic increases in supplemental feeding of hogs that we have seen the past 2 years will be continued. This indicates an increase of 19% from the 1958-59 level. This calculation resulted in a meal price of \$52.50.

What does all of this mean? I draw three conclusions:

1—The price of meal depends very much on the reactions of hog producers to the reduction in hog prices.

2—It is entirely possible that the price of 1959-crop meal will decline into a \$42 to \$48 range and stay there.

3—It is extremely difficult to foresee soybean meal prices over \$55 for any protracted period.

As the crush of soybeans is cut back from 425 million bushels each 1% reduction should result in a 1.6% increase in the price of meal.

Oil. We must contemplate the oils situation with great discouragement. The world supply of edible fats and oils is now so large that the rate of production increase must be reduced or consumption be increased. Much of the world's population is now abundantly supplied with fats and oils. The people whose consumption per capita is low are people whose incomes are low. They are not good customers of exporting countries. Such countries as the United States can only export to them under heavy subsidies.

Such subsidies do not contribute to the solution of the problem of surplus fats and oils. There are three steps in the fundamental solution to the dilemma of too much fats and too little protein feed:

1—A reduction in the world oil price that will enable poor people to buy and consume or withhold from export and consume more edible fats and oils.

2—An increase in the productivity, hence the purchasing power of the underdeveloped countries.

3—A further shift in production from the high-oil, low-protein oilseeds to the low-oil, high-protein seeds.

Steps one and three are retarded by such export devices as P. L. 480. The case for export subsidy as a de-

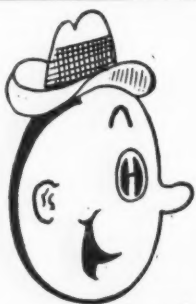
vice for accelerating step two has yet to be made. We use it entirely too much as a rationalization for our export dumping.

If we assume a crush of 425 million bushels our domestic soybean oil production will be about 4,590 million pounds. Butter production should remain about constant. Lard production will be up 325 million pounds and cottonseed oil production up 400 million. The production of other edible fats and oils should remain at about this year's level. Total production of edible fats and oils will be 11,475 million pounds, up 1,077 million from the current year. Increased carryover will add 122 million pounds for a total supply increase of 1,230 million.

Domestic use will be up 125 million on the basis of a constant per-capita consumption. The carryover needs to be reduced by about 132 million to get it back to a normal level.

These computations indicate that 3,162 million pounds of edible fats and oils will be available for export from a 425-million-bushel crush of soybeans. The oil equivalent of soybeans exported will be 1,296 million pounds so that total exports need to be 4,458 million. This year exports of edible fats and oils will be about 1,975 and the oil equivalent of soybeans 1,103 million for a total of 3,078 million. We need to increase exports of fats and oils by 1,187 million pounds and the total, including oilseeds by 1,380 million. This is about a 50% increase in fats and oils and a 40% increase in the total.

What are the prospects? Production of soybeans in Asia will be down. But this decrease will be taken up by the increased exports of soybeans. An increase in peanut production in Africa appears likely. The coconut oil supply situation has likely hit bottom and should start to increase by late spring. The olive



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crop should be substantially larger, particularly in Spain.

Requirements of north Europe should be up slightly more than the increase in soybean imports. We have probably achieved a permanent gain for soybean oil out of the tight coconut oil situation. They have had to learn to use more soybean oil and so have found out its real worth and how to handle it. A substantial proportion of this gain should be permanently retained.

Public Law 480 sales for the current year will amount to about 1,100 million pounds except for some amounts that will be carried over into October. This means that the free dollar business will be about 900 million, up 150 million from the year before. I think it reasonable to anticipate a further increase of 200 million in the year ahead for a total of 1,100 million. Subtracting this from the export availability of 3,162 million leaves 2,062 million as the size of the P. L. 480 job.

The P. L. 480 business with Spain for the current year is 465 million pounds. With a larger olive crop in Spain and what I suspect is per-capita saturation in Spain, we should cut this down by 250 million pounds for the year ahead. This means that

if all of the non-Spanish P. L. 480 business done in 1958-59 can be retained over 7 billion pounds of new P. L. 480 business must be found. I do not think it possible. The usefulness of P. L. 480 as a crutch to the soybean industry is coming to an end. We will now turn to more fundamental solutions. The time that has been lost while we hovered under the protection of P. L. 480 is going to make the problem ahead more difficult and the impact of the ultimate adjustment more severe.

I think that the oil situation means that someone will build inventory in the year ahead. It will be built in the United States and in Europe. The key question is at what price.

The decline in the price of oil needed to get inventory accumulated is not great. In the first place, 750 million to 1 billion pounds is not a large amount in the context of the total world fats and oil economy. Such an amount will not weigh heavily the world's fats and oil prices. In the second place, soybean oil is already cheap. World edible oil prices appear to have ended their long decline that commenced in 1953. A low was reached in mid-1958 and there has been a substantial recovery

since. Soybean oil has not participated in the recovery but has instead continued to decline. A year ago soybean oil was selling for about 10.12¢ per pound. It is now about 9.12¢. Grease is 5¢ to 6¢. In the total commodity complex of the world, fats and oils are cheap. In the past year the price of oil has been adjusted downward by 1¢. I cannot visualize a further adjustment in the year ahead of more than 1¢. I am far from convinced that there will be any. At the same time, short of war or unforeseen crop conditions, I cannot visualize any strength either.

Price of Soybeans. If we think in terms of \$50 meal and 8.5¢ oil at a crush of 425 million, we get a soybean price of about \$1.90 to Illinois farmers. This is very close to the loan rate. This computation places soybean processing margins at levels slightly below the current year which is to be expected on the basis of increased crush capacity.

There are two very big ifs in the soybean price situation. If the dramatic increase in supplemental feeding of hogs continues, soybean meal prices will carry soybean prices above the loan. If the 9¢ oil level can be held, soybean prices will hold above the loan.

How Big a Crop for a 425-Million

are you
planning
to

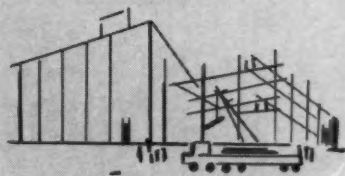
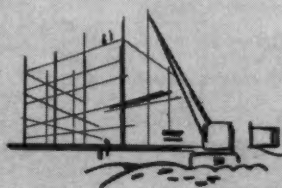
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Crush? In answering this question the first question is the size of the carryover and its availability. At this time I am disposed to place the carryover at 50 million bushels, next Oct. 1. Most of it will be owned by CCC. CCC is committed to the current sales policy only until Oct. 1. What their policy will be after that time is not known. My guess is that they will hold until after Jan. 1, 1960, and then sell at a little above the 1959 loan rate. So long as the soybean price is above the loan, we should count most of the 50 million in the available supply in the year ahead.

A crush of 425 million, exports of 120 million, and seed and feed of 32 million adds up to a total requirement of 577 million bushels. To this we should add 15 million for a minimum carryover or 592 million. Subtract 50 and the production needed is 542.

Conclusions: Obviously we are not going to produce as many soybeans as will be needed. Accordingly the price is going to be as high as the CCC resale price after the turn of the year. On the other hand the crop must fall below 542 million before the price has a very great chance of substantially exceeding the CCC resale price.

The Aug. 1 crop estimate is 531 million bushels. This is a yield of 24.2 bushels per acre. Last year's record yield was 24.2. We are in the process of getting another very high yield. As I have pointed out the final yield can be quite different.

The Aug. 1 crop estimate is fairly close to the breaking point of 542. At this time we must conclude that the prospects of soybean yields going backward enough to generate a bull market are very slim. The most likely thing to expect is that we will be fighting the loan territory and the CCC resale price all season. At the

same time it looks as if we will absorb about the entire supply.

The current report is large enough that there is no occasion for immediate bullishness. It is large enough that there may be storage space problems at harvest. If the crop is finally as large as it now looks the season's low should be made at harvest.

If your memories go back as far as my numbers you must reckon that at this year's acreage a crop of 450 million bushels was a logical expectation a month ago. That would have been quite bullish. I regret having to stop being a bull. The situation now is not bullish price but it is bullish soybeans.

When the current crop year ends we will have nearly, if not actually, used up the soybean production from the two biggest acreages and the two highest yields in the history of the industry. This certainly demonstrates what a good product, sold in a dynamic market at a realistic price, can do. The potential expansion of soybean production and soybean income is a long way from having been fulfilled.

Honeymead Plans New Extraction Installation

ENGINEERING Management, Inc., Park Ridge, Ill., announces it has been retained by Honeymead Products Co., Mankato, Minn., to design and supervise the construction and startup of a new, large prepress and extraction installation for processing soybeans and flaxseed.

Work is already under way on the plant, which will have a capacity of 60,000 bushels per day.

Prepressing will be accomplished by new type, high capacity screw presses recently developed by Rose, Downs & Thompson, Hull, England. Extraction will be accomplished in

existing equipment which is being relocated.

A newly designed, high capacity Blaw-Knox Lewis flaking mill will be used, believed to be the largest oilseed flaking mill ever built. Distillation, desolventizing and toasting equipment are all of special design for dual operation on soybeans and flax.

The new plant will be located in Mankato adjacent to Honeymead's existing facilities.

Coleman Crews Dies At Keiser, Ark.

COLEMAN CREWS, 58, farmer and land owner of near Keiser, Ark., died at his home July 27 after a long illness. Burial was at Osceola, Ark., July 29.

Mr. Crews was one of the earlier leaders in soybean production in eastern Arkansas. He was a member of the American Soybean Association, was a frequent attendant at the annual meetings and active on ASA committees.



Coleman Crews

He had lived in Mississippi County, Ark., most of his life, going there from Lawrenceburg, Tenn. He operated an elevator near Keiser.

He is survived by his wife, two sons and two daughters, 10 grandchildren, his mother and two sisters and brothers.

Unofficial estimates place the 1959 Yugoslavian soybean crop at 514,000 bushels compared with 184,000 bushels a year ago, according to Foreign Agricultural Service, U. S. Department of Agriculture.

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W. J. Morse

Father of U. S. Soy Crop Passes

WILLIAM J. MORSE, 75, who had better claim than any other man to the title of founder of the soybean crop industry, died of a cerebral hemorrhage early in the morning of July 30 at his home in Eastchester, N. Y.

Mr. Morse was known throughout the world and particularly in the United States and the Far East for his work in soybean development in the U. S. Department of Agriculture.

He was one of the founders of the American Soybean Association and three times president. He was one of the first men to be elected an honorary life member of the Association.

He was born in Lowville, N. Y., and attended Lowville Academy, then received his BSA from Cornell University.

Mr. Morse went to USDA in 1907 just at the time the Bureau of Plant Industry was making plans to carry on research in the growing of soybeans.

The plant, introduced from time to time from China, Manchuria, Korea, Japan, and other parts of Asia, had been known here for a century, but had increased to only a few thousand bushels a year. Now, after the long period of search and research, it is one of the nation's leading crops, totaling over half a billion bushels a year.

Thirty years ago, after having put

in 22 years of research in the Department, Mr. Morse spent 2 years exploring for soybeans and other crop plants in China, Japan, Korea and Manchuria. He returned with hundreds of varieties, many of which contributed to the improvement of strains already here.

By his development work he supplied the country with varieties suitable for various localities, increased the oil content of some—a big factor in the industrial use of this crop—and made other varieties better for food use. He stimulated the development of the vegetable soybean in this country. The soybean had been little more than a curiosity until research in USDA, largely by Mr. Morse, led the way to making it the important food, feed and industrial crop of today.

In 1947 USDA gave him a Superior Service Award.

He published more than 75 bulletins and articles on soybeans and was co-author of *The Soybean*, published in 1923 and in print until very recently.

Burial was at Mt. Hope Cemetery, Hastings-on-Hudson, N. Y. He is survived by a sister, Gladys H. Morse, Lowville, N. Y.; a daughter, Mrs. Walter A. Thalman, Eastchester, N. Y., and three grandchildren.

Mrs. Morse died last Dec. 23.

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Plan Solvent Plant at Stuttgart

CONSTRUCTION at Stuttgart, Ark., of what will be the South's largest single-unit solvent soybean oil extraction plant has been approved by the board of directors of the Arkansas Grain Corp., an affiliate of the Arkansas Rice Growers Cooperative Association.

Described by General Manager L. C. Carter as being "modern as tomorrow," the new plant will be located adjacent to the Stuttgart Grain Drying Co-operative's new 1-million-bushel elevator just east of the city. It will employ from 33 to 35 persons with an annual payroll in excess of \$100,000.



L. C. Carter

The plant, including machinery, equipment, auxiliary storage and warehouse space, and office, will cost approximately \$1.5 million. Annual sales will be approximately \$20 million. The Arkansas Rice Growers Cooperative Association's sales, added to this, will exceed \$50 million a year.

Plant capacity will be 500 to 700 tons of beans daily. Both 44% and 50% protein meal will be produced. Carter said the plant will operate 24 hours daily, 330 to 350 days annually. Plans call for the plant to be ready to process the 1960 crop.

The announcement climaxed a grain storage program that began in 1957 with building of elevators at Hazen and Weiner. Ten others are being completed this summer, including one at Stuttgart, which gives the Arkansas Grain Corp. use of bean storage of 8 million bushels.

Location of the oil extraction plant at Stuttgart hinged on results of a survey conducted over the past 6 months by Daniel H. McVey of Washington, D. C., chief of the grain branch, Farmers Cooperative Service, U. S. Department of Agriculture. It was the result of an initial study by McVey that led to the corporation's embarking on the soybean storage program.

The storage program had its inception with demands by the 5,000 members of the Arkansas Rice Growers Cooperative Association for such facilities after rice acreage curbs and marketing quotas were imposed in

1955. Since that time, soybean acreage in Arkansas has boomed until it is now over five times that of rice.

Carter said that 93% of Arkansas' soybean production is in the 24 Delta counties, which embrace most of the area served by the Arkansas Grain Corp.

Minnesota Men Predict Margarine Law Repeal

COMPLETE repeal of Minnesota's restrictions on yellow margarine in 1961 is predicted by John W. Evans, Montevideo, and Charles V. Simpson, Waterville, Minn., directors of the American Soybean Association.

"While it is regrettable that the 1959 session of the Minnesota legislature did not see fit to repeal the state's archaic ban on yellow margarine, as well as its discriminatory license fees and taxes on the vegetable oil spread, we are gratified by the growing amount of support which we received in the legislature and other groups this year," Evans and Simpson declared in a statement to the press.

"Public opinion in Minnesota is beginning to make itself heard and felt with increasing frequency in the legislature, the press, and among farm organizations, consumers and grocers. A recent statewide survey by the Minnesota Poll showed that Minnesotans, by a 2-to-1 margin, are in favor of permitting yellow margarine to be sold in the state."

Last year Minnesota ranked third among the states in total soybean acreage harvested.

Expect 2 Million Export from Brazil

RIO GRANDE DO SUL, Brazil, expects to have 60,000 metric tons (2.2 million bushels) of soybeans for export, and buyers are stocking up in the expectation that exports will be at the free market exchange rate (145 cruzeiros per U. S. dollar on July 10), reports USDA's Foreign Agricultural Service. At present, soybeans are in the second export category with an effective exchange rate of 100 cruzeiros per U. S. dollar.

Reports are that 10,000 tons (367,000 bushels) have already been sold to Japan, according to USDA.

Brazil exported only 1.2 million bushels of soybeans, all to Japan, in 1958. Of the total 4.8 million bushels produced in 1958, 4.3 million bushels were grown in Rio Grande do Sul.



GRITS and FLAKES . . . from the World of Soy

Final Contracts Let For Cargill Elevator

Final construction contracts for an 11.5-million-bushel grain elevator now being built at Baie Comeau, Quebec, on the St. Lawrence river's north shore, have been awarded to 10 Canadian firms by **Cargill Grain, Ltd.**, at Montreal.

The last phase of building, employing some 650 workmen, will begin immediately, according to A. C. Greenman, vice president of the grain handling and processing firm, and will see erection of the elevator's distinctive 6,649,000-bushel gable-roofed "big-bins," four 750,000-bushel steel "semi-big-bins," various structural steel for handling and conveying equipment, and installation of machinery.

Greenman said the giant storage facility should be ready to accept grain from Canadian prairie provinces and the Midwestern United States in October and to begin export shipments by early November.

The elevator will enable stockpiling of grain at the Atlantic and will permit export even during winter months when the St. Lawrence Seaway is closed by ice, Greenman said.

When completed the facility will be a licensed public elevator, with most U. S. grain expected to come from Cargill, Inc., Minneapolis, 94-year-old parent company of the Canadian firm.

Unloading docks will be capable of serving the largest ships usable in the Seaway and its loading dock will be able to load two ocean vessels simultaneously.

Atwood a Director of A. E. Staley Mfg. Co.

Paul W. Atwood, president of the UBS Chemical Co., was named a member of the board of directors of the **A. E. Staley Manufacturing Co.**, Decatur, Ill., in a meeting of the Staley board.

The Cambridge, Mass., chemical company was acquired by the Decatur corn and soybean processor June 30.

In other board action the Staley director elected Henry M. Staley assistant treasurer of the company and named three assistant secretaries. They are:

Kenneth J. Maltas, grain division manager.

James W. Moore, crude oil department manager.



Paul W. Atwood



Kenneth Maltas

Edward C. Lane, meal sales department manager.

Mr. Atwood was elected to a board vacancy, and will succeed Dr. R. E. Greenfield, who retired as vice president, manufacturing, early this year but has continued on the Staley board since.

Henry Staley has been insurance department manager in the financial division since 1957. He is a son of A. E. Staley, Jr., chairman of the board.

Kenneth Maltas has been with the company 26 years, starting in the feed department in 1933. He has headed the grain division since 1953.

James Moore joined the company in 1941 and has been manager of the crude oil department since 1952.

Edward Lane has been with the company since 1952, when he started as merchandising manager in feed sales, and became manager of the meal sales department.

Hoehne Joins Bays Co. On West Coast

A. C. Hoehne, who retired recently as vice president in charge of the soybean division of Archer-Daniels-Midland Co., joined the vegetable oil brokerage firm of **Cecil Bays and Co.**, Arcadia, Calif., Sept. 1.



A. C. Hoehne

A pioneer in the soybean industry, Hoehne has been active in the affairs of the National Soybean Processors Association, the Soybean Council of America and the Vegetable Oil Export Corp.

Associated with the fats and oils industry for 37 years he has a wide acquaintance in that field both here and abroad. Last spring, he negotiated an \$8 million sale of soybean salad oil for ADM with the Spanish government.

Hoehne, who joined ADM in 1928, had been manager of the soybean division since 1955.

Sincroft Made Central Soya Lecithin Manager

The promotion and transfer of Donald E. Sincroft to the position of manager of bulk lecithin and export sales in the chemurgy division have been announced by the **Central Soya Co., Inc.**, Fort Wayne, Ind. Sincroft, who has been located in Fort Wayne, will have his new operating headquarters in the company's Laramie plant in Chicago.

Also transferred from Fort Wayne to Chicago is William G. Eichar as technical salesman in the lecithin department of the chemurgy division.

Sincroft joined Central Soya in 1945 as district sales manager, products division, and Eichar joined the company's lecithin department in Fort Wayne in 1954.

Three other promotions have been announced by Central Soya Co.

Thomas C. Griffith, manager of the company's Buffalo, N. Y., office, has been promoted to the staff of the meal and oil sales department at Fort Wayne, effective Aug. 15.

Succeeding Griffith as manager of the Buffalo office is John H. Hamm, who has been assistant manager of the meal and oil sales department at Central Soya's Chattanooga, Tenn., plant.

Keith Darby has been promoted from the meal and order department in the Fort Wayne office to the position of assistant manager of the meal and oil sales department at the Chattanooga plant. His promotion and transfer were also effective Aug. 15.

Daffin Co. Forms New Sales Division

Daffin Manufacturing Co., originators and leading producers of mobile feed processing machinery as well as conventional feed milling equipment, has announced the formation of a new industrial sales division to market many of the firm's products in the industrial field, according to Irl A. Daffin, president of the Lancaster, Pa., company.

Daffin said that many of the products developed by his organization for use in the feed and grain field are finding increased application in the chemical, pharmaceutical and general materials handling branches of industry.

George E. Sprackling, secretary of the Daffin Manufacturing Co., has

been appointed to head the new division.

Included in the Daffin line of products being introduced to industry are pneumatic materials handling equipment, conveyors, a pneumatic bulk truck unloader kit, MacLellan batch mixers, pelleting machines, grinding, mixing, and blending units and industrial hammermills.

St. Cloud Co. Plans New Soybean Plant

St. Cloud Canning Association, St. Cloud, Minn., has changed its name to **Central Minnesota Processors, Inc.**, and plans to build a modern soybean processing plant to add to its canning operations. M. G. Wells has advised by letter.

Shares of stock will soon be offered publicly to provide the basic financing for the new soybean industry, according to Mr. Wells.

The St. Cloud association is over 25 years old.

Olson Heads Sales For Simon-Carter

The appointment of Maurice (Maury) L. Olson to the newly created position of general sales manager of the **Simon-Carter Co.**, Minneapolis, Minn., is announced by C. C. Ingraham, president.

Further integration of the firm's

various sales departments will be carried out under Mr. Olson's supervision.

Mr. Olson, who has been export manager following a period of time in the engineering department, has a broad milling background, having served many years with one of the leading milling companies.

Eugene C. Swift, president, the **Sharples Corp.**, centrifugal and process engineers, Philadelphia, has acquired the centrifugal division, one of the divisions of the Fletcher Works, also of Philadelphia. Sales and service will be continued by the Fletcher division of Sharples.

Appointment of Marshall O. Inman as feed supplement sales representative has been announced by the **Borden Special Products Co.** He will cover the company's sales area in the Midwestern States. He comes to Borden's from the Rochester, Minn., Dairy Cooperative, where he was director of procurement and field service.

The promotion of John W. Secoske to the position of elevator superintendent at its Marion, Ohio, plant has been announced by **Central Soya Co., Inc.**, Fort Wayne, Ind. He had been associated earlier with Central Soya's Laramie Ave., Chicago, processing plant.

Leonard F. Barrington has been

named director of applications research for the **A. E. Staley Manufacturing Co.**, Decatur, Ill., succeeding James P. Casey, who has resigned to accept a position with the Union Starch and Refining Co., Columbus, Ind.

Reichman Crosby Hays Co., Memphis, Tenn., has been appointed exclusive distributor for the Cincinnati Rubber Manufacturing Co., Cincinnati, Ohio, on its line of conveyor and elevator transmission belting, hose and hose fittings and extruded and molded products.

Russell Peete, executive of **Pidgeon-Thomas Iron Co.**, Memphis, Tenn., passed away July 20. He had been with the firm for more than 30 years.

Pete Lawson has been appointed merchandising manager for the Carborundum Co., Cincinnati, Ohio, and W. H. "Bill" Weeks, for the Lukenheimer line for the **Reichman Crosby Hays Co.**, Memphis, Tenn.

Planned addition of 140,000-bushel storage space to the 220,000-bushel capacity terminal elevator operated at Chattanooga, Tenn., by **Cargill, Inc.**, was announced. Construction began the week of Aug. 10 with completion scheduled by Oct. 1, in time to handle the annual fall flow of grain downriver from Midwest production areas.

William B. Reynolds has been named vice president of **General Mills, Inc.**, and director of research. He is a native of Ottumwa, Iowa, and formerly director of research for Phillips Petroleum Co.

Herbert A. Holman has been appointed Chicago area district engineer, sales, for **Blaw-Knox Co.**, chemical plans division, Pittsburgh, Pa. He will make his headquarters in the company's sales office, 36 South Wabash Ave., Chicago 3. Phone: STate 1-0430.

The appointment of Richard W. Stromberg to its special soya products chemurgy sales organization in Chicago, Ill., has been announced by **Central Soya Co., Inc.**, Fort Wayne, Ind. He will work primarily with processors of foods and will handle sales of edible soy protein and other special products. He previously was employed by the White Cap Co.

Floyd Garner of Kansas City has been appointed Midwest district sales manager of the **S. Howes Co., Inc.**, Silver Creek, N. Y. He has been with Howes for 8 years. James Everett, a sales representative for 7 years, has been appointed district manager for the Central States territory.

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Time to Revise Japanese Import Formula

By SHIZUKA HAYASHI

Managing Director, Japanese American Soybean Institute, Nikkatsu International Bldg., No. 1, 1-Chome Yurakucho Chiyoda-Ku, Tokyo, Japan

THE 1959 IMPORT budget (April 1959 to March 1960) provides for the importation of soybeans in the amount of \$94 million or approximately 1 million tons for crushing and food purposes. The imports to cover the major part of this quantity are under the funds allocation system with the exception of a small quantity, estimated at about 40,000 tons, to be imported under the automatic approval system. U. S. soybeans are controlled under the funds allocation system with the maximum quantity set. Soybeans coming under the automatic approval formula (known as A.A.) are those produced and shipped out from countries other than the United States and communist countries. Although the budget is set for 40,000 tons, this is flexible.

In the past soybeans imported under the automatic approval system came mostly from Brazil and negligible quantities from Nigeria, Korea, etc. As of Aug. 15 the total quantity applied for import under A.A. and approved by the government is approximately 60,000 metric tons for the first-half fiscal year (April-September 1959). Out of this quantity 31,000 tons are Brazilian soybeans and the balance includes those of other countries such as Nigeria, Malaya, Kenya and a few other countries in Africa. Because the quantity so far approved is considerably more than the estimated budget of 20,000 tons (half of the annual

budget of 40,000 tons) serious problems have been created.

However, the unusually large quantity of soybeans contracted for shipment from Kenya, Africa, and Malaya has become so conspicuous that it naturally has attracted attention and has thus developed into a serious problem. Soybeans contracted as Kenya soybeans or Malayan soybeans are reported to be soybeans from Red China. Neither Kenya nor Malaya produces soybeans in any quantity. According to a reliable source Malaya produces not more than 50 tons and Kenya not more than 500 tons. Rumors therefore that these soybeans are of Red Chinese origin could be reliable.

This problem is becoming more and more serious because of two reasons:

First, it reflects the possibility of cutting down the quantity under the funds allocation system for future imports.

Second, the possibility of illegal imports involving violation of customs regulations.

A little explanation is needed in connection with the interpretation of the automatic approval imports. Regulation provided under automatic approval import reads, "Soybeans shall be those produced and shipped from A.A. area (here it specifies various countries)." It calls for presentation of certificates of origin to the customs house for import clearance.

Soybeans produced in areas other than Kenya and Malaya can never be called Kenya or Malayan soybeans. Naturally there could be no

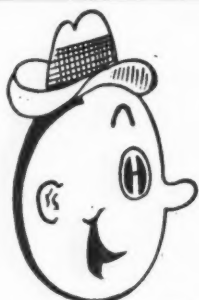
certificates of origin legitimately testifying that the soybeans are produced in Kenya or Malaya. If Chinese soybeans are shipped from Kenya or Malaya as Kenya or Malayan soybeans and imported into Japan as such this constitutes a violation of customs laws, and this certainly will not be overlooked by the customs authorities.

The importers who have made these contracts are entirely new in the soybean industry and have never in the past engaged in soybean business. Evidently with the aim of securing qualifications to get import allocations of soybeans in the future, these firms are running great risks.

As long as the import of soybeans is under government control with limited allocation of dollar funds there will be certain irresponsible firms looking for loopholes in the laws and entering into illegal commitments thus creating an unnecessary disturbance and eventually jeopardizing healthy trade. All these troubles, complications and red tape and often alleged unfairness in distribution can be eradicated only if the import of soybeans becomes free under the overall automatic approval system.

The figures of import as compiled by the customs for January/June period are as follows (in metric tons):

	1958	1959
USA	360,311	512,555
Nigeria	2,316	2,577
Brazil	—	7,714
China	88,833	0
Panama	249	—
Malaya	—	3,215
Canada	—	507
Korea	—	350
Kenya	—	2,169
Tanganyika	—	390
Uganda	—	353
Total	451,709	529,830



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U. S. soybean crop.....	1946—203 million bushels 1956—449 million bushels 1957—483 million bushels 1958—574 million bushels
U. S. soybean oil production.....	1946—1.5 billion pounds 1956—4.3 billion pounds 1957—4.7 billion pounds 1958—5.9 billion pounds
U. S. soybean oil meal production.....	1946-47—4.1 million tons 1955-56—6.5 million tons 1956-57—7.5 million tons 1957-58—8.1 million tons
Exports of U. S. soybeans.....	1946—not shown 1955-56—67.4 million bushels 1956-57—85.3 million bushels 1957-58—85.5 million bushels
Value of U. S. soybean crop.....	1946—\$ 522,140,000 1956—\$ 908,747,000 1957—\$1,003,262,000 1958—\$1,134,281,000

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Weather Generally Favors Crop in August

THE 1959 CROP of soybeans was forecast at 531 million bushels based on Aug. 1 conditions, by the U. S. Department of Agriculture in its report out Aug. 10. This compares with a crop of 574 million bushels harvested in 1958.

The Galvin report out Aug. 5 placed the crop at 520.5 million bushels, and the National Soybean Crop Improvement Council on Aug. 3 estimated a crop of 535.7 million bushels.

High temperatures were quite general over the soybean belt in late August, but rainfall was also quite widespread and the crop in general was making good progress.

Drought areas still remained in western Iowa, Minnesota, and the Dakotas, and rainfall was needed in many local areas.

There were scattered reports of harvest, but no general crop movement was expected until mid-September.

Weeds were reported more troublesome than usual in some areas.

Reports from Soybean Digest crop correspondents and others follow:

Arkansas. Keith Bilbrey, county agent, Blytheville, Ark. (8-19): Crop condition satisfactory. August weather and moisture conditions mostly satisfactory. Small areas got a bit too dry. This has been a very expensive weed and grass control year. I believe county averaged 27 bushels last year. I guess 25 bushels per acre this year. Crop movement might be a week earlier than 1958.

Jake Hartz, Jr., Jacob Hartz Seed Co., Stuttgart (8-20): Stands, podding good but need rain some areas. Scattered showers, hot and dry. Grass and weeds heavy cotton areas, beans clean rice area. Crop is improved in areas that have had rain, in others has deteriorated fast. Crop movement will begin about 5 days earlier than last year.

Delaware. Frank B. Springer, Jr., associate agronomist, University of Delaware, Newark (8-20): Looks like an excellent year for soybeans in Delaware. Adequate moisture with above normal temperatures. Some

yield increase over 1958. Movement will begin about Oct. 1 for early crop.

Illinois. L. Parke Kerbaugh, Stanford (8-22): Because of dry weather **crop is expected to mature earlier** than usual. Crop shorter than usual. Moisture below normal, weather hot and dry. Looks like yield will be below 1958. Some may be harvested Sept. 15.

Indiana. Ersel Walley, Walley Agricultural Service, Fort Wayne, Ind. (8-18): Maturity of crop 10 days ahead of normal, crop condition best ever. Total yield 5% above 1958.

Chester B. Biddle, Remington: This area definitely hurt from dry hot weather. Temperature in 90s this week. Yield outlook down 3 to 5 bushels per acre compared with 1958.

Iowa. Glenn Pogeler, North Iowa Cooperative Processing Association, Mason City (8-20): Have had a few showers, still a little dry but crop looks wonderful. Total crop will be down about 8% to 10%. Crop movement will begin about Sept. 25, same as last year. Probably some beans will have to be sold for lack of space.

Kansas. Elmer L. Buster, Kansas Soya Products Co., Emporia (8-21): Crop condition excellent. Good soaking rains up to 5 inches with little runoff Aug. 14 and 15. Total crop should be slightly above last year. Would guess crop movement will begin about Sept. 15, or about same as last year.

Louisiana. W. M. Scott, Jr., Scott Plantations, Tallulah (8-20): Crop conditions good. Some needing rain. A good general rain would insure medium and late varieties. Weeds generally not too bad. Harvest of early varieties should begin about Sept. 15 to 20, about 5 days earlier than 1958.

Minnesota. John R. Thompson, agronomist, University of Minnesota Southern Station, Waseca (8-21): Early varieties in plots are turning. Very dry. Some beans on lighter soil or hills are burning. Bean size will be very small unless rains come soon. Acreage down probably 20% yield per acre will be down over 25%. Crop movement will begin 10 days earlier than 1958.

Mississippi. W. T. McKinney, Anguilla (8-19): Showers first half of month followed by fair weather

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CROP REPORT

furnishing almost ideal weather for beans. Many fields now showing excessive foreign growth. Harvesting will be difficult. Most beans showing pods. Per acre yield as good as 1958. Total will be larger because of 5% increase in acreage.

Missouri. Kermit F. Head, manager MFA Grain and Feed Division, Mexico (8-20): Crop condition good but not as good as last year. Need rain at present time. Received small load of beans Aug. 18. Expect main movement to start in 3 weeks, ahead of last year.

Ohio. M. G. Stoller, Stollers Seed House, Paulding, Ohio (8-20): Beans have done very good the last 3 weeks and crop looks good. Beans in Paulding and Defiance Counties were planted in dry dirt but are good now. August has been very hot and a little dry in some small areas but most had good rain Aug. 16 and 17. Weed control not very successful in solid seeded, row beans fair. Our yield should be 4 to 6 bushels better than 1958 and I think even better than this in Van Wert and Mercer Counties. No sign of ripening yet.

Lewis C. Saboe, Ohio State University, Columbus (8-21): Crop condition excellent. August weather

and moisture conditions very favorable in general. Less weeds this year than any of the 5 previous years.

Texas. Harold D. Loden, Paymaster Farms, Aiken (8-19): Some late planted beans in areas that received June hail. On average crop is best in history of area. Average to above average day temperatures, night temperatures slightly below normal, no rain which is good since small rains interfere with irrigation schedules. Believe yield will exceed 1958 yield over entire area. Experimental plantings of the Hill variety very good and above expectations. If crop yields as expected, Hill will replace Lee to a major extent in a few years.

Virginia. Louis Groh, Louis Groh & Son, Inc., Clay Bank (8-19): Crop condition excellent. Weather very good, ample moisture. Yield outlook about same as 1958. Crop movement will begin about Nov. 1.

Ontario. A. E. Jolley, Chatham (8-20): Crop condition 20% below normal. Generally dry. Crop outlook has deteriorated. Preliminary estimate 5 million bushels compared to 6½ million bushels in 1958.

SOYBEANS FOR BEANS

	Yield per acre			Production		
	Average 1948- 57	Indi- cated 1958	Average 1959	1948-57	1958	Indi- cated 1959
— Bushels —						
N. Y.	16.2	17.0	17.0	100	102	102
N. J.	18.9	25.0	24.0	555	1,125	984
Pa.	17.3	22.0	20.0	381	330	280
Ohio	22.5	26.0	26.0	24,800	37,466	36,998
Ind.	22.9	26.5	27.0	41,410	58,432	58,941
Ill.	24.2	28.0	26.0	96,964	140,364	124,202
Mich.	20.5	23.0	22.0	2,668	6,095	4,730
Wis.	14.8	14.5	15.5	830	1,740	1,364
Minn.	19.0	17.5	18.5	30,879	53,935	40,404
Iowa	22.8	25.5	26.0	44,343	78,668	61,698
Mo.	19.0	26.0	25.0	27,917	55,432	55,000
N. Dak.	13.6	13.5	15.0	953	3,672	3,345
S. Dak.	15.0	11.5	9.0	1,712	2,978	1,278
Nebr.	20.6	30.0	27.0	1,919	6,180	3,564
Kans.	11.8	22.0	21.0	4,094	9,262	8,610
Del.	16.8	22.5	21.0	1,529	3,622	3,507
Md.	18.0	22.0	20.0	2,136	4,246	4,000
Va.	17.8	22.5	22.0	3,274	6,052	6,094
N. C.	16.8	23.0	23.0	5,426	10,212	10,971
S. C.	12.0	15.5	15.5	1,782	5,611	6,060
Ga.	11.1	12.5	13.5	536	1,125	1,107
Fla.	19.3	25.0	24.0	1424	1,150	1,104
Ky.	18.0	24.5	24.0	2,286	3,871	3,360
Tenn.	18.4	23.5	24.0	3,554	6,486	6,960
Ala.	19.3	22.5	22.0	1,646	2,970	3,146
Miss.	16.2	23.0	24.0	7,013	18,400	20,736
Ark.	18.0	24.5	25.5	15,163	49,637	56,432
La.	17.4	22.0	23.0	1,196	2,860	3,174
Okla.	11.8	22.5	22.0	455	1,012	1,188
Texas	18.9	26.0	28.0	106	1,378	2,100
U. S.	21.0	24.2	24.2	326,020	574,413	531,439

¹ Short-time average. August 1959 report, crop reporting board, AMS, USDA.

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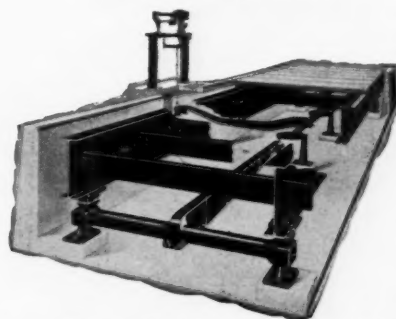
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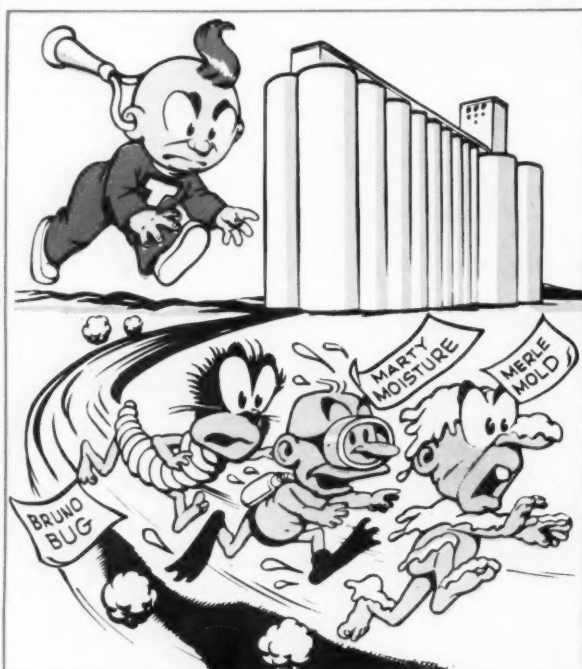
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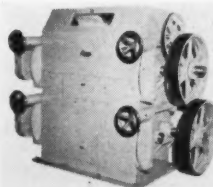
ELEVATOR BOOSTER. The West Fargo Manufacturing Co. has developed a booster to increase the capacity of its Westgo Commercial Portable Auger Elevators. The inability of an auger elevator to pick up as much material as it is capable of handling led the firm to develop a device for gathering and concentrating the materials to be elevated, in a larger space prior to its entering the standard tube and auger conveyor. This resulted in the conveyance of the materials more nearly to the capacity of the standard tubes and augers. And the capacity of the auger elevators was increased.

The use of the booster does not materially increase the horsepower requirements. In most cases where the recommended gas engine or motor is used with the standard unit, no additional horsepower is required. The 8-inch Westgo Commercial Portable Auger Elevator with booster, resulting in greater capacities, costs only about 5% more than the conventional 8-inch commercial units.

For more information write Soybean Digest 9c, Hudson, Iowa.

ROLLER MILLS. A completely new series of heavy-duty roller mills, designed specifically to process soybeans and other hard grains, has been added to the line of roller mills by Ross Machine & Supply Co., Inc.

The new series will make available 24 sizes in four different models, with primary emphasis on rugged construction to meet the heavy-duty, 24-hour service requirements of this kind of grain processing. Heart of the extra-duty design is in the special alloy Turn-Tuff Rolls.



For soybeans, special corrugations are available in reduction multiples of 4-5 to 12-14 corrugations per inch, with differentials to suit. Sizes currently listed in these machines are: 10x36, 10x42, 2- and 3-pair high, and in special sizes on order.

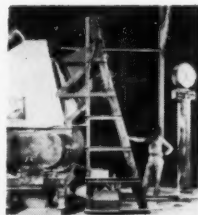
A complete catalog is available on request. Write Soybean Digest 9a, Hudson, Iowa.

DUMPER. A new dumper that lifts and dumps complete inplant bulk trucks has been introduced by Conveyors and Dumpers, Inc.

The unit is designed for rapid, low-cost batch loading of mixing, grinding and pulverizing machinery or kettles, tanks, vats and other process equipment.

The dumper is available in capacities up to 3,000 pounds and dumping heights to 50 feet. It is furnished in portable and stationary models.

For further information write Soybean Digest 9b, Hudson, Iowa.



CATALOG. Pidgeon-Iron Thomas Co. has just issued its 1959 catalog which contains 430 pages illustrated, some in color.

For a copy of the catalog write Soybean Digest 9d, Hudson, Iowa.

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WASHINGTON DIGEST

Look for Seasonal Price Rise in '60

BIGGER total supplies of fats and oils; lower prices; probably a larger export movement during the coming marketing season. This summarizes in brief the August report of USDA on the fats and oils situation, which amounts to a preview of the 1959-60 outlook. Highlights:

Total supplies of edible fats, oils and oilseeds will be up an estimated 10% in the coming season over a year ago. Beginning stocks will be about a third larger. This is due to a larger soybean carryover and more lard.

Lard output is estimated to be up some 11% next season; cottonseed up more than a fourth. Soybean supplies, based on the August estimate of the crop, will be down only a little from last year, but a part of the total will be in CCC hands.

Domestic disappearance of food fats will continue to rise in line with population growth. It is too early to make an accurate assessment of edible exports, but sales for dollars plus the movement of oils and lard under the P. L. 480 program are expected to reach a new high in the coming year.

"Soybean exports are expected to continue to rise in 1959-60 as factors generating the expansion during the current year are likely to continue to operate," says the report. "The cumulative effect of 2 years of drought in the Far East is expected to continue to reduce world copra and coconut oil availabilities at least through mid-1960.

"The improved European demand for U. S. soybeans in 1958-59 stemmed mainly from shorter copra supplies and reduced northern European oil stocks. Exports to

Japan were up as a result of that country's break in trade relations with communist China, as well as an absolute rise in level of imports.

"A factor that will help move U. S. fats and oils into export channels is the reduced support for 1959-crop soybeans. Reduced supports on soybeans and increased supplies of cottonseed oil should enhance our competitive position in world markets."

The supply of soybeans is currently placed at 581 million bushels—only 14½ million below last year. But the free supply will be smaller. Of the 50 million bushels estimated in 1959 carryover, some 35 to 40 million will be owned by Commodity Credit Corp. CCC had only 14 million bushels a year ago.

A drop in soybean prices close to the new support level of \$1.85 a bushel is anticipated early in the marketing season, but there should be a sizable seasonal rise later, officials believe.

The soybean crush and exports are expected to rise in the coming season by as much as 10 to 15 million bushels over the peaks of this year. The soybean crush is expected to hit a new peak of 405 million bushels this season. Exports are placed at an alltime high of 110 million bushels.

1960 Carryover

With prospective increases in use from a slightly smaller supply, 1960 carryover of soybeans is now estimated at around 25 million bushels, half of this year's total. If these estimates are borne out, the soybean industry would wind up in good



By **PORTER M. HEDGE**
Washington Correspondent for
The Soybean Digest

shape at the close of the coming season.

Soybeans will have more competition next season. The outlook is for the price spread between soybean oil, lard, and cottonseed oil to be narrow during the heavy marketing months.

The cottonseed crop is estimated at 28% larger than a year ago; the crush of around 5.7 million tons up 27%. A crush this size would produce 1,950 million pounds of crude oil and 2,650,000 tons of cake and meal.

Lard again is in trouble. The forecast is for 1959-60 production of 2,975 million pounds—up 300 million over the current season. Carryover at 100 million pounds is double that of last year. Domestic use is running at 2,050 million pounds, and exports have been approximately 600 million pounds in recent years.

Lard has been added to the list of commodities available under the P. L. 480 program in the hope this will stimulate exports.

Edible oil exports are to continue large, USDA officials believe. Total shipments for the current season have had to be shaved back due to reduced takings under the P. L. 480 program within the marketing year.

11

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Coconut Oil Stockpile

It's doubtful that the 265-million-pound stockpile of coconut oil will be released until the 6-month waiting period following announcement of its availability has passed. This will be Dec. 23, 1959.

Twice there have been objections to the unanimous consent resolution proposing immediate release of the stockpile. It is possible that a bill might be slipped through Congress at near close of the session releasing the oil, but this is not likely. There is no great pressure for release now.

It will take more than 2 years to move the stockpile. Not more than 14 million pounds can be sold every 6 weeks. Domestic disappearance runs about 75 million pounds for this period. With a shortage of coconut oil continuing, release of the stockpile is not expected to give other oils any serious trouble.

P. L. 480 Extension

Extension of the P. L. 480 program for at least another year was moving through Congress at press time.

The House has reported out a 1-year extension in H. R. 8609. It provides for use of \$1.5 billion in farm surplus products in exchange for foreign currencies, and for use of \$300 million in products for disaster relief.

The House bill also made provision for 10-year contracts with receiving countries, and for 20-year loans at government interest rates. An effort to push through a mandatory barter program in the House was beaten.

The Senate agriculture committee the last week in August reported out an amendment to the P. L. 480 bill incorporating a number of Senator Humphrey's food for peace proposals.

The committee extended the program for 3 years instead of 1 and authorized the use of \$1½ billion in surpluses for each of the 3 years. (The American Soybean Association favors the 3-year extension and use of \$2 billion per year.)

The committee also adopted the name, Food for Peace Act of 1959, but established an administrator to be appointed by the President within the U. S. Department of Agriculture, without the proposed peace food administrator title.

It eliminated three of five proposed new uses for foreign currencies.

A majority of republican members of the committee voted with the democrats on most of the amendments.

- MARKET STREET -

We invite the readers of THE SOYBEAN DIGEST to use MARKET STREET for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here. Rate 10c per word per issue. Minimum insertion \$2.00.

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Midsouth Officers Reelected

ALBERT CRAVENS, Missouri Soybean Co., Caruthersville, Mo., was reelected president of the Midsouth Soybean and Grain Shippers Association at the sixth annual convention at Hotel Peabody, Memphis, Tenn., Aug. 4 and 5.

John Terral, Terral-Norris Seed Co., Lake Providence, La., was reelected vice president; and Paul C. Hughes, Farmers Soybean Corp., Blytheville, Ark., secretary-treasurer.

New directors elected were Charles B. Fisackerly, Blaine Elevator Co., Blaine, Miss.; W. L. Gatz, Jr., the Bertig Co., Paragould, Ark.; and James H. Ozment, Jr., Farmers Grain & Soybean Co., Dyersburg, Tenn.

Directors reelected: Cravens; Terral; Jake Hartz, Jr., Jacob Hartz Seed Co., Stuttgart, Ark.; M. L. Lockhart, Lockhart Grain Co., Augusta, Ark.; Joseph Stallings, Stallings Bros. Feed Mill, Morrilton, Ark.; E. T. Barrett, Soybean Storage and Elevator Co., Hornersville, Mo.; L. R. Stokes, Cloverdale Grain Elevator, Alligator, Miss.; Wiley Jenkins, Delta Brokerage and Warehouse Co., Itta Bena, Miss.; B. O. Berry, St. Joseph Grain Elevator, St. Joseph, La.; Sam Savage, Dixie Seed Co., Gilliam, La.; Gene Williamson, Browder Milling Co., Fulton, Ky.; and Jack Hudgens, Warterfield Grain Co., Union City, Tenn.

Over 200 men and women from all segments of the Midsouth grain industry attended the meeting.

Says Soybean Progress Stifled by Farm Law

A soybean industry future so bright as to double by 1975 is today blighted by the "distorted, crippling consequence of legislative blundering," it was stated at St. Louis, Mo., Aug. 10 by John H. MacMillan, Jr., chairman of Cargill, Inc., national grain and vegetable oil processing firm.

MacMillan told the annual meeting of the National Soybean Processors Association that increased production of beans due to greater acreage, efficiency and yield per acre, high domestic use of soybean oil and meal due to better diets and greater populations, stepped-up exports due to lower production costs and effective demand—all are inevitable, given only realistic farm laws.

The speaker said, however, that soybean plantings are down this

year, despite real demand, because crop supports cause farmers to "prefer to produce corn for government bins rather than soybeans for consumption." Market development for supported farm crops has been stifled under present legislation, MacMillan said.

The oilseed processors were told that nearly 80% of price support funds go to larger commercial farms, but that 56% of farms—small and classified as "marginal"—get little or no meaningful aid. He called for immediate expansion of the government's Rural Development Program to encourage uneconomic farm units to change to more productive and rewarding efforts. Then, he said, our larger, efficient farms—almost all of which are family owned and operated—could be freed of controls to produce for prices that would create great new world markets.

Japan Considers Tariff Increase on Soybeans

SOYBEANS are among the many commodities for which Japan is considering tariff increases, according to the Foreign Agricultural Service of the U. S. Department of Agriculture.

The Japanese development bureau of the Ministry of Agriculture and Forestry (MAF), which is responsible for the interests of Japanese farmers, has placed special emphasis on soybeans in the list of crops it has submitted to MAF for consideration. MAF is cooperating with the Ministry of Finance to help work up legislation revising tariff laws. The Ministry of Finance hopes to present a bill to the Diet session in January 1960.

The food agency of MAF, which is responsible for the overall food supply of Japan, will also submit recommendations. The food agency feels that the matter is of such importance that the new Cabinet Ministerial Council should review the whole problem before the Ministry of Finance takes any action.

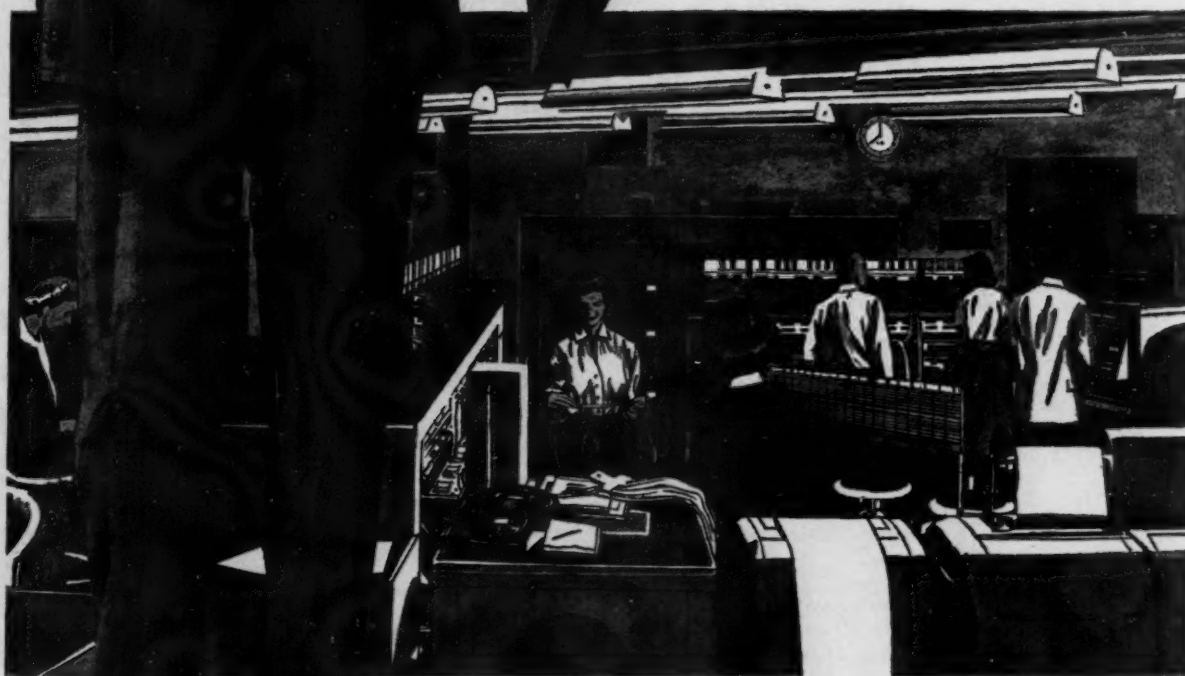
Japanese processors are strongly opposing any increase in oilseed tariffs. However, tariff-minded farmer representatives apparently carry considerable weight, according to the USDA report.

The development bureau has already spearheaded several attempts in recent years to increase tariffs on certain oilseeds including the 10% ad valorem imposed on soybeans.



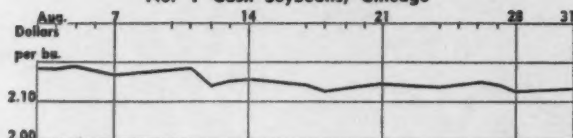
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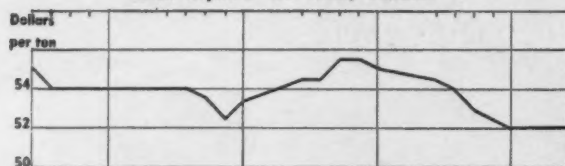


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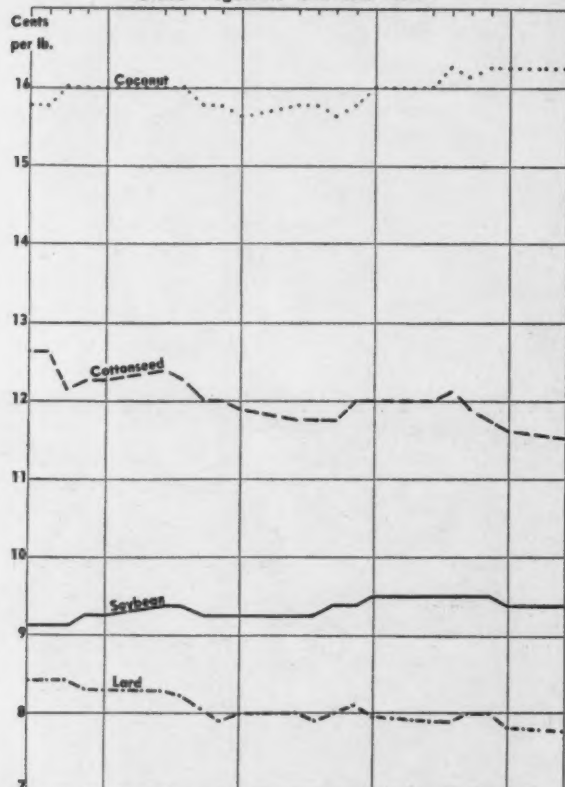
DAILY MARKET PRICES No. 1 Cash Soybeans, Chicago



Bulk Soybean Oil Meal, Decatur



Crude Vegetable Oils and Lard



August Markets

THE SOYBEAN market was a little weaker in August, losing 6¢ during the month. Soybean oil gained 3/4¢ while meal showed periods of weakness and strength and lost \$3.50 for the month.

Weakness in beans reflected the government's August crop report and the generally favorable growing weather for the crop. USDA's forecast of a 531-million-bushel crop was generally larger than expected by observers in the trade. The fact that harvest was close at hand and the new crop was maturing well limited market interest in the old crop.

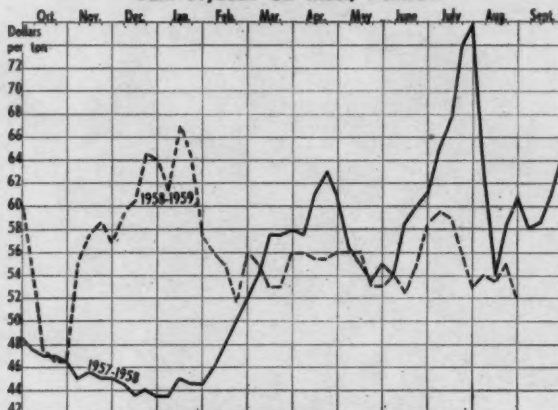
Other market factors included the continued strong export business—exports of beans passed 100 million bushels for the first time in history in August. And there was a growing belief that the carryover from the 1959 crop in the fall of 1960 will be smaller than this year's carryover, and that there will be a need to dip into CCC stocks during the coming year.

The pressure of plentiful supplies of mixed feed

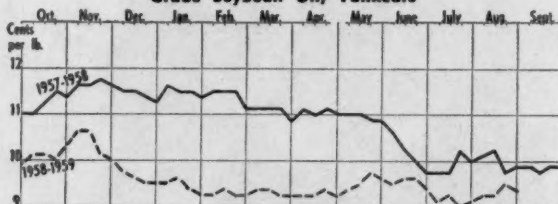
TRENDS AT A GLANCE (Weekly Close) No. 1 Cash Soybeans, Chicago



Bulk Soybean Oil Meal, Decatur



Crude Soybean Oil, Tankcars



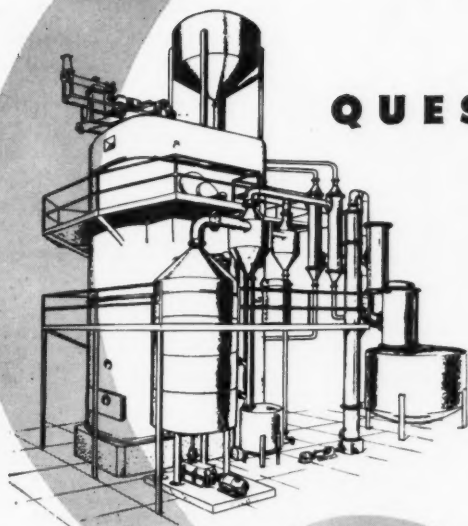
forced ingredients including soybean oil meal lower during the fore part of the month. Some mixed feed plants were reported operating only 3 or 4 days a week. But soybean meal recovered on better demand after drifting to the lowest level in 2 months.

There were reports of seasonal shutdowns of soybean processing plants for repair.

BYPRODUCTS. The price of acid soybean soap stock dropped from 6 1/2¢ per pound to 5 3/4¢ during August. And raw soybean soap stock, from 2 3/4¢ to 2 1/2¢ per pound.

1957 AND 1958 SOYBEAN CROPS 1958-1959 1957-58

Quantity repaid on price support loans as of July 31	42,560,000 bu.	
Total delivered to Commodity Credit Corp. on warehouse receipts, farm loans and purchase agreements	67,558,717 bu.	
Total CCC sales June 1-Aug. 27....	29,194,000 bu.	
Soybeans crushed Oct. 1-July 31.....	344,147,000 bu.	297,119,000 bu.
Exported Oct. 1-July 31.....	98,287,000 bu.	76,965,000 bu.
Balance on hand Aug. 1 for processing, export or carryover.....	122,062,000 bu.	82,648,000 bu.
Total soybeans inspected for overseas shipment including lake shipments to Canada Oct. 1-Aug. 21	102,151,954 bu.	81,275,661 bu.



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IN THE MARKETS

EXPORTS. Preliminary data on U. S. exports of soybeans and soybean oil for June 1959, with comparable data for June 1958 and cumulative totals for the marketing years 1957-58 and 1958-59 to date, from Foreign Agricultural Service, U. S. Department of Agriculture.

Unit	June		October-June	
	1958	1959	1957-58	1958-59
Soybeans	5,089,585	8,880,368	70,964,884	88,286,546
Soybean oil:				
Crude	6,386,356	10,550,869	126,042,301	243,152,653
Refined, but not further processed ..	9,738,108	20,295,054	122,941,771	50,160,159
Refined, deodorized and hydrogenated ..	79,984,529	22,485,700	296,385,046	241,920,625

Soybeans: Inspections for export by coastal areas and country of destination July 1959 (1,000 bu.)

Atlantic		Other	
Norway	78	Subtotal	262
The Netherlands	19	Subtotal	6,154
Other	145	Great Lakes	
Subtotal	242	Canada	2,016
Gulf		Norway	46
The Netherlands	649	United Kingdom	38
Belgium	159	The Netherlands	112
West Germany	37	Subtotal	2,212
Israel	428	Grand total	8,608
Japan	4,619	Total Jan.-July 1959	58,148
		Total Jan.-July 1958	37,685

Based on weekly reports of inspections for export by licensed inspectors and does not include rail or truck movement to Canada or Mexico. In some cases, the ultimate destination of the soybeans exported is not shown on the inspection reports. Therefore, the quantity for each country may vary from official Census data which are based on custom declarations.

Soybeans: Inspections for export by ports and Great Lakes shipments July 1959 (1,000 bu.)

Atlantic		Lake Ports	
Philadelphia	19	Chicago	1,304
Baltimore	19	Duluth and Superior	150
Norfolk	152	Toledo and Superior	758
Subtotal	242*	Subtotal	2,212
Gulf		Totals	
New Orleans	3,977	July 1959	8,608
Mobile	648	Jan.-July 1959	58,148
Port Allen	1,529	Jan.-July 1958	37,685
Subtotal	6,154		

Based on weekly reports of inspections for export by licensed inspectors and does not include rail and truck movement to Canada or Mexico. * Includes 52,734 bushels of soybeans shipped from Morehead City, N. C.

Title I, P. L. 480 shipments in July, 1959

	Metric tons	Unit	Quantity
Soybean oil	40,137	lb.	88,487,000
Cottonseed oil	17,659	lb.	38,931,000

Foreign Agricultural Service, USDA.

Soybeans: Inspections for export by coastal areas and through Great Lakes, May, June and July, 1958 and 1959 (1,000 bu.)

Atlantic ports	Gulf ports	Pacific ports	Great Lakes	Total
1,746	18,320	0	7,190	27,256
469	14,228	0	2,960	17,657

INSPECTIONS. Soybeans inspected by grade and percent, reported by Agricultural Marketing Service.¹

	June 1959 ²		May 1959		June 1958		Oct.-June 1958-59		Oct.-June 1957-58	
	1,000 bu.	Pct.	1,000 bu.	Pct.	1,000 bu.	Pct.	1,000 bu.	Pct.	1,000 bu.	Pct.
No. 1	6,642	25	6,338	34	8,186	27	81,866	25	69,064	23
No. 2	13,256	51	9,362	50	14,521	48	154,727	48	130,755	43
No. 3	3,768	14	1,948	10	5,976	20	58,186	18	72,986	24
No. 4	1,604	6	739	4	1,374	4	22,120	7	24,333	8
Sample	1,059	4	385	2	415	1	8,310	2	7,170	2
Total	26,329	100	18,772	100	30,472	100	325,209	100	304,308	100

¹ Carlot receipts have been converted to bushels on the basis that 1 carlot equals 1,750 bushels. ² Of the June receipts, all were yellow soybeans. Inspections of soybeans in June included 5,886,026 bushels as cargo lots, 2,110,343 bushels as truck receipts, and the balance as carlot receipts. Based on reports of inspections by licensed inspectors at all markets.

PROCESSING OPERATIONS. Reported by Bureau of the Census for June and July 1959.

Primary products except crude oil at crude oil mill locations: Production, shipments and transfers, and stock, July 1959-June 1959 (1,000 tons) Products¹

	Production		Shipments and transfers		Stocks end of month	
	July 1959	June 1959	July 1959	June 1959	July 31, 1959	June 30, 1959

Soybean:						
Cake and meal	745.7	770.2	782.5	*766.6	116.4	*153.2
Millfeed (hull meal)	15.8	18.1	16.4	18.5	5.3	5.9

¹Data on soy flour and lecithin no longer collected monthly. *Revised.

Soybeans: Net receipts, crushings, and stocks at oil mills, by states, July 1959-June 1959 (1,000 tons)

	Net receipts at mills ¹		Crushed or used		Stocks at mills	
	July 1959	June 1959	July 1959	June 1959	July 31, 1959	June 30, 1959

U. S.	701.7	821.0	957.4	994.7	1,090.8	1,346.5
Arkansas	2.9	(2)	17.4	19.2	22.7	37.1
Illinois	237.3	305.7	322.2	302.9	292.2	377.0
Indiana	(2)	(2)	(2)	(2)	(2)	(2)
Iowa	186.1	184.4	165.5	165.3	184.1	163.6
Minnesota	94.1	47.8	77.3	80.2	53.2	36.4
Mississippi	(2)	(2)	27.6	36.2	5.8	(2)
Missouri	(2)	(2)	(2)	(2)	76.0	85.1
Nebraska	(2)	(2)	(2)	(2)	(2)	(2)
North Carolina	2.6	4.1	15.3	13.5	26.8	39.4
Ohio	54.9	77.9	88.8	89.3	128.0	162.1
Tennessee	34.2	78.2	88.3	101.1	123.6	177.7
All other	89.6	122.9	155.0	187.0	178.4	268.1

Note: Detail figures may not add to totals because of independent rounding. ¹ Net receipts for each state are derived from the quantity of beans crushed and net change in stocks. ² Included in "All other" to avoid disclosure of figures for individual companies.

Soybean Products: Production and stocks at oil mill locations, by states, July 1959-June 1959

	Crude oil (millions of pounds)				Cake and meal (thousands of tons) ¹			
	Production		Stocks		Production		Stocks	
	July 1959	June 1959	July 31, 1959	June 30, 1959	July 1959	June 1959	July 31, 1959	June 30, 1959

U. S.	344.1	355.2	118.6	138.8	761.5	788.3	121.7	*159.1
Arkansas	6.2	7.0	0.8	1.6	13.6	14.2	4.1	6.0
Illinois	116.9	110.0	45.1	47.9	248.3	234.6	36.9	53.1
Indiana	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Iowa	58.8	58.7	21.5	23.2	134.5	134.1	15.7	*21.6
Minn.	27.1	28.4	11.6	24.4	62.4	64.3	4.1	7.9
Miss.	11.0	14.0	3.9	6.0	24.0	29.1	7.8	11.4
Missouri	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Nebraska	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
N. Car.	4.9	4.2	1.6	0.5	11.7	10.7	3.2	2.9
Ohio	30.1	30.4	9.0	10.6	72.7	72.4	5.4	5.2
Tenn.	31.9	37.0	10.8	8.7	68.9	79.6	7.9	10.5
All other	57.2	65.5	14.3	15.9	125.4	149.3	36.6	40.5

*Revised. Note: Detail figures may not add to totals because of independent rounding. ¹ Includes millfeed (hull meal). ² Included in "All other" to avoid disclosure of figures for individual companies.

PRICE SUPPORT. Loans and purchase agreement totals, loan repayments, and quantities delivered through July on 1958-crop soybeans put under support.

Warehouse and Farm Loans			Purchase Agreements	
Total Under Loan	Quantity Repaid	Quantity Delivered	Quantity Under Agreements	Quantity Delivered

125,916,953	42,560,309	66,655,437	14,303,065	908,282
-------------	------------	------------	------------	---------

Through July, farmers had resealed on farm-stored price-support loans for another year through 1960 maturity dates on 10,085,083 bushels of soybeans.

Soybeans: CCC price support operations, 1958 and 1957 crops (1,000 bu.)

1958 crop		1957 crop		Total owned by CCC ¹	
Total put under support ²	Delivered to CCC ³	Total put under support ²	Delivered to CCC ⁴	July 1, 1959	July 1, 1958

140,205	57,212	90,552	44,137	42,302	26,418
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¹ Includes stocks sold but not delivered. ² Includes both purchase agreements and quantities put under loan. ³ Reported as of June 30, 1959. Does not include 4,425,522 bushels resealed. ⁴ Total deliveries reported through May 31, 1959. Commodity Stabilization Service, Grain Division.

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TERMINAL STOCKS. Agricultural Marketing Service's commercial grain stocks reports for close of business on Friday or Saturday preceding date of report (1,000 bu.)

	July 28	Aug. 4	Aug. 11	Aug. 18
U. S. soybeans in store and afloat at domestic markets¹				
Atlantic Coast	198	159	95	104
Gulf Coast	1,058	692	644	719
Northwestern	479	357	212	383
Lower Lake	6,412	5,966	5,321	4,845
East Central	2,894	2,754	2,443	2,155
West Central and Southwestern	1,723	1,683	1,679	1,667
Total, current week	12,764	11,611	10,394	9,873
Total, year ago	8,976	8,191	6,746	5,785
U. S. soybeans in store and afloat at Canadian markets				
Total, current week	294	293	244	419
Total, year ago	123	93	72	27
Total stocks in above positions				
Current week	13,058	11,904	10,638	10,292
Year ago	9,099	8,284	6,818	5,812

¹ Includes all soybeans in public elevators, including government-owned stocks, at 45 principal markets. Does not include stocks in elevators attached to flour mills, crushing plants, and other processing facilities.

Primary receipts (1,000 bu.) of soybeans at important interior points for week ending:

	July 24	July 31	Aug. 7	Aug. 14
Chicago	289	406	182	89
Duluth	6	9	.....	.....
Indianapolis	2	49	.....	.....
Kansas City	60	11	18	5
Minneapolis	138	94	64	49
Omaha	2	.....	.....	5
Peoria	5	.....	.....	2
Sioux City	40	14	2	4
St. Joseph	29	32	7	7
St. Louis	4	2	15	19
Toledo	35	28	46	31
Wichita	19	15	22	.....
Totals	629	660	356	211
Last year	659	1,078	914	394
CCC-owned stocks of soybeans in Chicago	821	821	821	821
Total Chicago soybean stocks	1,315	5,669	5,101	4,691

PRICES. Average prices for soybeans received by farmers, effective parity, and support rates, reported by Agricultural Marketing Service (dollars per bushel).

Average farm price			Effective parity	Average price as percent of parity	National average price support rate		
July 15, 1959	June 15, 1959	July 15, 1958	July 15, 1959	July 15, 1959	1959 crop	1958 crop	1957 crop
2.05	2.09	2.11	2.90	71	1.85	2.09	2.09

Average farm and parity prices from crop reporting board.

FACTORY USE VEGETABLE OILS for June 1958 and June 1959. Reported by Bureau of the Census.

Consumption of vegetable oil foots in fatty acids (million pounds)

Total consumption ¹		Used in fatty acids		Percent used in fatty acids	
June	Jan.-June	June	Jan.-June	June	Jan.-June
1959	1958	1959	1958	1959	1958
11.9	13.8	76.8	70.3	7.5	7.2
		49.6	36.8	63%	52%
				52%	52%

¹ Excluding amounts consumed in refining. Source: U. S. Bureau of the Census.

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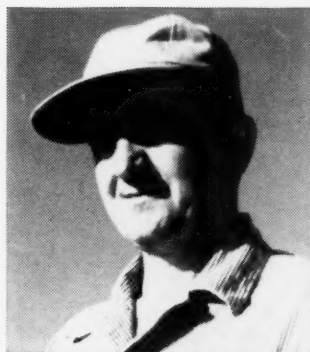
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Thomas Dobrinick, (pictured) Belle-ville, Ill. 43 gilts saved 368 pigs. Total feed cost of 10¢ per pound of pork sold. This figure includes all feed for breeding herds as well as market hogs.

William Seiler, Carson City, Mich. 7 crossbred gilts raised 70 pigs to market on Wayne Brood Sow Supplement, Tail Curlers, Pig Balancer and Hog Balancer. Lbs. Feed per Lb. of gain, 3.01. Feed cost per Lb. of gain, 8.14¢. (Includes grinding and mixing and grain at 2¢ per lb.)

Midwest Swine Testing Station. 16 boars on Wayne Feeding program averaged 1.92 lbs. daily gain with 3.06 lbs. of feed per lb. of gain. Reached 200 lbs. at an average of 143½ days of age.

Jim Gimerling, Hanna, Ind. Two groups of 40 and 30 head topped Chicago market. Both groups fed out in just over 5 months. "Wayne Feeds have given me everything I could ask for—big healthy litters, fast, economical gains, plus a No. 1 finish."



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PER LB. FEED COST

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